CUSTOMS GAZETTE.

No. XI.—JULY-SEPTEMBER, 1871.

PART VI.

MEDICAL REPORTS FOR THE HALF YEAR ENDED 30TH SEPTEMBER, 1871,

BEING No. 2 OF THE SERIES.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

SHANGHAI:

PRINTED AT THE CUSTOMS PRESS.

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National Oceanic and Atmospheric Administration

Environmental Data Rescue Program

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December 20, 2000

SHANGHAI, 30*th December*, 1871.

SIR,

IN accordance with the directions of your despatch No. 6 *A* (Returns Series) of the 24th June, 1871, I now forward to the Returns Department of the Shanghai Office the following documents:—

A.—Inspector General's Circular No. 19 of 1870, pp. 5–6.

B.—Report on the Health of Swatow, pp. 7–9, and p. 83;

C.—Report on the Health of Amoy, pp. 10–23;

D.—Report on the Health of Foochow (Pagoda Anchorage), pp. 24–32;

E.—Report on the Health of Shanghai, pp. 33–43;

F.—Report on the Health of Hankow, pp. 44–60;—each of these reports relating to the April–September half year.

G.—Report on the Health of Foreigners and Natives at Kiukiang for the year 1871, the smallness of the foreign community at that place obviously rendering it inadvisable to report separately on the health of its members, pp. 61–66.

H.—Report on the Health of Takow and Taiwan, pp. 67–69;

J.—Report on the Health of Canton, pp. 70–72;—each of these relating to the April–September half year.

K.—Report on the Physical Conditions of Peking, and the habits of the Pekingese as bearing upon Health *(First Part)*, pp. 73–82.

I take this opportunity of suggesting through you to the Surgeons to the Customs at the various ports, that for purposes of comparison it is advisable for all to adopt some one recognised classification of disease. The *Nomenclature of Diseases* (London 1869), drawn up by a Committee appointed by the Royal College of Physicians of London, though doubtless not the best possible, is in the hands of nearly every member of the profession, and adherence to it would for this reason, if for no other, facilitate the collection of statistics from the tables supplied by the Surgeons. I shall be happy to receive and compare opinions on this question, and I will, if such expressions of opinion are forwarded to me, inform each Surgeon as soon as possible in what direction the majority incline.

It will be noticed that in my Report for Shanghai I have freely availed myself of the observations of other local practitioners. Whatever completeness that Report possesses is due to the kindness of these gentlemen, and to the advantage I have taken of it. Having made this confession I may without risk of being misunderstood commend my example so far to my colleagues in the Customs service at ports where there is more than one medical man.

I would lastly suggest that in order to secure the earliest possible publication of the Reports, the manuscripts should be forwarded at such a time as will make them reach me not later than the 1st June and 1st December. This arrangement would I am informed likewise prove a very great convenience to the Printing Department of the Shanghai Office.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,

Peking.

The Contributors to this Volume are—

E. I. Scott, Esq., L.R.C.S.I., ...	Swatow.
Aug. Müller, Esq., M.D., ...	Amoy.
P. Manson, Esq., M.D., M.Ch., ...	
J. R. Somerville, Esq., M.D., F.R.C.S.E., ...	Pagoda Anchorage, Foochow.
R. A. Jamieson, Esq., M.A., M.D., M.R.C.S., ...	Shanghai.
A. G. Reid, Esq., M.D., L.R.C.S.E., ...	Hankow.
G. Shearer, Esq., M.D., L.R.C.S.E., ...	Kiukiang.
D. Manson, Esq., M.B., M.Ch., ...	Takow and Taiwan.
F. Wang, Esq., M.D., L.R.C.S.E., ...	Canton.
J. Dudgeon, Esq., M.D., M.Ch., ...	Peking.

A.—Inspector General's Circular No. 19 of 1870.

Inspectorate General of Customs,

Peking, 31*st December*, 1870.

SIR,

1.—It has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the Medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, &c. / Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to, will serve to fix the general scope of the undertaking. I have committed to Dr. R. Alex. Jamieson, of Shanghai, the charge of arranging the reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices,—the thousands of miles north and south and east and west over which these offices are scattered,—the varieties of climate,—and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated, and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr.....and request him, in my name, to hand to you in future, for transmission to myself, half-yearly reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.—That the Medical Officer at your port may know who are the other members of the profession with whom he is invited to join in this work, I append a list of the officers at each port or place.

Peking,	Dr. J. DUDGEON.
Newchwang,	Dr. J. WATSON.
Tientsin,	Dr. J. FRAZER.
Chefoo,	Dr. CARMICHAEL *(a)* and Dr. MYERS.
Hankow,	Dr. A. G. REID.
Kiukiang,	Dr. G. SHEARER.
Chinkiang,	———
Shanghai,	Dr. BARTON *(b)* and Dr. GALLE.
Ningpo,	Dr. R. MEADOWS *(a)*.
Foochow,	Dr. J. M. BEAUMONT.
,, Pagoda Anchorage,	Dr. SOMERVILLE and Dr. SHERWIN.
Amoy,	Dr. JONES and Dr. MÜLLER.
Tamsui,	Dr. L. H. FRANKLYN.
Takow,	Dr. P. MANSON.
Swatow,	Dr. SCOTT.
Canton,	Dr. F. WONG.
,, Whampoa,	Dr. R. SHILLITOE.

I am, &c.,

(signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS—*Newchwang, Ningpo, Tientsin, Foochow, Chefoo, Amoy, Hankow, Tamsui, Kiukiang, Takow, Chinkiang, Swatow,* and *Shanghai, Canton.*

(a) Absent. *(b)* Resigned.

Dr. Scott's Report on the Health of Swatow for the half year ended 30th September, 1871.

In drawing up this Report I will, for convenience of reference, classify the diseases which have come under my notice among foreigners, according to Dr. Farr's nosology, indicating the number of cases seen under each head in each month of the half year.

	April.	May.	June.	July.	August.	September.
A.—Zymotic Diseases.						
I. *Miasmatic Diseases*:—	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.
Intermittent Fever,	9	4	8	17	10	10
Small-pox,	1	—	—	—	—	—
Diarrhœa,	10	9	8	1	6	3
Dysentery,	1	1	5	3	6	2
Ophthalmia,	3	2	1	3	1	3
Carbuncle,	—	—	2	—	—	1
Cholera,	—	—	—	—	1	—
Boils,	—	—	—	8	6	4
Continued Fever,	—	—	—	—	—	1
II. *Enthetic Diseases*:—						
Syphilis,	9	8	8	8	7	7
Iritis,	1	1	1	1	—	1
Gonorrhœa,	7	4	10	10	7	3
Bubo,	10	—	—	3	1	—
Orchitis,	—	1	1	—	5	—
Stricture,	—	1	—	—	—	—
III. *Dietic Diseases*:—						
Intemperance,	—	—	1	1	—	1
Purpura,	—	—	—	1	—	—
IV. *Parasitic Diseases*:—						
Aphtha,	1	—	—	—	—	—
Tape Worm,	—	—	1	1	—	1
Round Worm,	—	—	—	—	—	4
B.—Constitutional Diseases.						
I. *Diathetic Diseases*:—						
Gout,	—	1	—	—	2	—
Rheumatism,	—	2	—	7	—	—
Asthma,	—	—	1	—	1	—
General Dropsy,	—	—	—	—	—	1
II. *Tubercular Diseases*:—						
Phthisis Pulmonalis,	1	—	1	1	—	1
Scrofula,	—	—	—	—	—	1
C.—Local Diseases.						
I. *Diseases of Nervous System*:—						
Cerebritis,	1	—	—	—	—	—
Hydrocephalus,	—	—	—	1	—	—
Otitis,	—	—	—	—	1	1
II. *Diseases of Circulatory System*:—						
Varicose Veins,	1	—	—	—	—	—
Popliteal Aneurism,	—	—	1	—	—	—
III. *Diseases of Respiratory System*:—						
Bronchitis,	—	—	—	2	—	1
Congestion of Lungs,	—	—	—	1	—	—

C.—Local Diseases—*Continued.*	April.	May.	June.	July.	August.	September.
IV. *Diseases of Digestive System* :—	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.
Strangulated Inguinal Hernia,	1	—	—	—	—	—
Dyspepsia,	3	3	1	3	1	2
Colic,	1	1	1	—	—	1
Hepatitis,	1	2	3	1	3	1
Pharyngitis,	2	1	—	—	1	1
Gastritis,	—	—	1	—	2	3
Piles,	—	—	2	1	1	—
Cirrhosis of Liver,	—	—	—	1	—	—
Enteritis,	—	—	—	—	1	1
Fistula in Ano,	—	—	—	—	2	—
V. *Diseases of Urinary System* :—						
Nephritis,	—	1	—	—	—	—
Cystitis,	—	2	1	—	1	—
VII. *Diseases of Locomotive System* :—						
Periostitis,	2	—	5	—	1	—
VIII. *Diseases of Integumentary System*:—						
Eczema,	2	2	—	—	1	—
Whitlow,	1	—	1	—	1	—
Abscess,	—	1	3	5	—	—
IX. *Diseases of the Eye* :—						
Ulceration of Cornea,	1	1	—	—	—	1
Pterygium,	1	—	—	—	—	—
D.—Developmental Diseases.						
II. *of Women* :—						
Leucorrhœa,	1	—	—	—	—	—
E.—Lesions from Violence tending to Sudden Death.						
I. *Accident* :—						
Sunstroke,	1	—	1	—	—	—
Stab,	1	—	—	—	—	—
Burn,	—	—	1	—	—	—
Incised Wound,	—	—	1	—	—	—
Fracture of tibia and fibula,	—	—	—	—	—	1

It will be seen from the table that zymotic diseases are the most prevalent, forming almost three fourths of the total number of cases. Of this class, ague stands first as to number. Next in frequency, and far surpassing ague in severity, come venereal diseases with their sequelæ. Syphilis is found in every variety, from the simple chancre to the most severe tertiary symptoms, and I often find one unfortunate wretch suffering from all forms of the disease at the same time. Thus I have had lately under my care a man who laboured at once under gonorrhœa, gonorrhœal rheumatism, a sloughing chancre, a rupial eruption, periostitis of the tibiæ and sternum, and syphilitic fissures of the rectum. Similar combinations are only too common. Gonorrhœa and syphilis appear in the table on equal terms, but if iritis and bubo be added to the *syphilitic* cases, and *orchitis* and *stricture* be added to the *gonorrhœal* cases, *syphilis* takes the first place.

The necessity for checking these diseases among foreigners is very urgent. Something might be done by licensing brothels and putting them under medical supervision, and the co-operation of the Chinese Government might reasonably be solicited in aid of some plan for the prevention of those disasters which are as fearful to the Chinese themselves as to foreigners. I need hardly say how great a boon proper supervision would prove to present sufferers and to future generations.

Next in frequency to venereal comes diarrhœa; then dysentery and boils. Boils are very troublesome during summer. I have known one man have as many as two hundred during this season. The distress they cause and the weakening discharge they produce have a very serious effect.

The appearance of cholera this summer is worthy of mention. I saw only four cases—the first died as I came to his bed-side, the second died before I could get to him, the third I was fortunate enough to see a few minutes after he was taken ill; and under the energetic administration of castor oil and brandy—half ounce doses of each every half hour—he recovered from the stage of collapse in about twelve hours. The after period, one of high fever, I treated successfully with large doses of quinine. The last case was a Chinese. I saw him soon after the attack commenced, and treated him like the former case. He recovered also. I have not been able to learn that cholera was epidemic among the Chinese this year, but the friends of the man just mentioned at once recognized the disease and told me that choleraic diarrhœa was very prevalent in their district at that time. Fortunately no other cases occurred.

Only one case of small-pox occurred among foreigners, and this was imported from Shanghai. I cannot let this pass without mentioning the line of treatment I pursued, as I have adopted it with great success in many other cases,— namely the internal administration of carbolic acid, and the external application of nitrate of silver. As the case was a typical one and the carbolic acid treatment, so far as I am aware, new, I may be pardoned for mentioning it. The patient was covered with a confluent eruption; pulse 140, respiration 60, temperature in axilla 102.4°. I administered five-drop doses of carbolic acid every two hours, and in six hours the pulse had fallen to 120, the respiration to 40, and the temperature to 101°. In twelve hours the pulse had fallen to 96 and the temperature to 100°, and on the following morning the temperature was nearly normal, pulse 84, respirations 20, and the patient, who on the previous day was almost comatose, declared himself quite well and was anxious to get up and walk about. I continued the acid treatment at longer intervals till fresh pustules ceased to appear. There was no bad symptom after the first day.

The local diseases present very few features of interest. A case of aneurism, which was treated with large doses of iodide of potassium internally (after the plan of Dr. BALFOUR of Edinburgh) being perhaps an exception. The result was perfect consolidation of the tumour in ten days.

Following the heads suggested in the Inspector General's Circular of December 1870, I would state:—

a.—The general health of Swatow during the period reported on has been unprecedentedly bad. Estimating the foreign population at about 500, including the shipping, my returns give 399 cases of disease during the six months.

The death rate is nevertheless small—at least from actual disease—there having been only *eight* deaths in the *seven months ended 31st October*, viz:—

Drowning, 4.
Ulceration of Stomach, 1.
Cholera, 2.
Hydrocephalus, 1; making the deaths from disease only four, or less than 14 per thousand per annum.

b.—The diseases prevalent at Swatow have been sufficiently shown above.

c.—The general type that diseases assume is the intermittent type, and I find all diseases require more or less an anti-periodic regimen.

d.—*Relation of disease to season.*—I believe that the next report will show a great increase of the class of local diseases, and particularly those of the respiratory and urinary systems, while miasmatic diseases will probably not be so prevalent during the winter season.

This summer there has been a very unusual amount of rain, and a very unusual amount of illness. Whether this be cause and effect or simply coincidence, I have always remarked that during the summer season three or four days' rain gives many people an attack of ague.

f.—There has been no epidemic in Swatow this season.

Drs. Müller and Manson's Report on the Health of Amoy for the half year ended 30th September, 1871.

Following the example of Dr. Watson of Newchwang and Dr. Meadows of Ningpo, we will preface our report by a few remarks on the physical characters of the country, its climate and the other hygienic influences under which its inhabitants live.

This part of the province of Fokien is very hilly. The hills are of granite, and partly from the want of soil, but principally from the false economy of the people, who cut down nearly every tree and shrub and grub up the natural grass, they have a bleak and uninviting appearance. Enormous masses of granite absorb and radiate the heat, storing it up during the day to return it to the air during the night. Fortunately several large rivers and estuaries intersect the country and open a road through the hills for the sea-breezes and monsoons. These and the great rise and fall of the tide facilitate the circulation of air, rendering what would otherwise be a hot and unhealthy country comparatively mild and salubrious. By the industry of the people every available spot has been brought under cultivation. The alluvial flats along the banks of the rivers, and the narrow gorges among the hills where water can be obtained, are occupied by rice fields, while in the drier soils sweet potatoes, ground-nuts, sugar-cane and a variety of suitable crops are raised. The rainfall is very capricious. For the most part the climate is dry, frequently several years passing without a sufficiency of rain. Famine or great distress are the consequence, and epidemic disease of some form is sure to follow in their train. After three years of drought we have this summer had abundance of rain, and tanks and wells are again filled, after remaining useless or stinking for a long time.

The following table will give an idea of the temperature for the summer months, though perhaps it represents a lower range than generally obtains for the season:—

Table of Temperature during Six Months, April to September:—

	Maximum.	Minimum.	Average.	Days of Rain-fall.	Instruments on a wall facing north-east, on Kulangsu.
April,.....	82° Fah.	60° Fah.	69.7° Fah.	3	
May,.....	89° ,,	67° ,,	77.5° ,,	13	
June,.....	88° ,,	75° ,,	79.3° ,,	14	
July,.....	91° ,,	76° ,,	83° ,,	3	
August,.....	88° ,,	78° ,,	82.7° ,,	11	
September,.....	89° ,,	72° ,,	81.3° ,,	7	

During the other half of the year the climate is much cooler. Then the clear cool air goes far to reinvigorate the victim of the summer heats, out-door exercise is possible, and the high living usually indulged in by Europeans can be borne with comparative impunity.

The people though industrious are poor in the extreme and their earnings small. From 60 to 100 *cash* a day, for an ordinary labourer, to 120 to 150 *cash* a day for a mechanic, are about the general wages. To support a wife and family on this must be a hard task even for the most economical. Very little can be saved against the rainy day, and sickness or a rise in the price of rice must cause incalculable distress. Rice, or a mixture of rice and sweet potatoes, flavoured with pickled vegetables or salt fish, is the staple food; pork and beef are the luxuries of the few.

In the country the people are principally agricultural; along the coast they employ themselves in fishing or are sailors, occasionally combining these occupations with farming. In Amoy and other large towns manufactures of various kinds engage large numbers.

The town of Amoy, as most Chinese towns are, is superlatively dirty. The streets, narrow and irregular, are filthy in the extreme and redolent of every impurity. Pigs and dogs are the sole representatives of the elaborate machinery of sanitation in use in European towns, and a scientific sanitarian with only home experience to guide him would confidently predict the reign of epidemics and death. Yet the Chinese manage to live and thrive where he would hardy dare to lodge his pigs. There is no typhus, no typhoid or other disease considered the inevitable consequence of defective sanitation, although Amoy is full of typical typhus dens. Luckily filth, overcrowding, and bad food are not the only factors necessary for the manufacture of a typhus epidemic,—were they so we should live here in perpetual dread.

Typhus and typhoid are not the only fevers whose absence we have remarked. Indeed with the exception of small-pox we have met with no representative of the class of continued fevers which claims so large a number of victims in Europe. We have never met a case of scarlet fever, measles or relapsing fever either here or in Formosa. Diphtheria, so common in Peking, does not exist or is very rare, yet other diseases of an epidemic character, such as mumps and whooping cough, are common enough. The petechial fevers are, we think, with the exception mentioned, entirely wanting. Considering this, and reflecting on the rarity of the atheromatous and fatty degenerations with the numerous dangerous diseases they entail, one may be at a loss to account for the mortality. When we consider, however, the prevalence of small-pox in a population completely unprotected by vaccination, and learn that almost everyone, should he live long enough, is sure to contract the disease, while the mortality from the unmodified form is about one in three, we dispose at once of a part of the difficulty. Then as second in fatality we might rank malarial diseases, as remittent fever, ague, diseases of the spleen and liver, anæmia and their consequences. Cholera might come next; then perhaps leprosy. These are the principal causes of death, but ordinary diseases of neither an epidemic nor endemic character are common here as in Europe. Phthisis, bronchitis, pneumonia, cancer, etc. are rife enough.

For Europeans, as they are now housed, the climate cannot be considered unhealthy. Their places of business and a few of their residences are situated along the foreshore of the town,—rather a hot locality,—but for the most part they have their private houses on Kulangsu. This, a small rocky island quite close to Amoy, affords excellent situations for building. These have been carefully selected by the residents, and houses in every way suitable to the climate built on them. In the summer they have the full benefit of the strong sea-breezes blowing during the greater part of the day, and of the land winds at night. The cold of winter is never so intense as to make their exposed situations uncomfortable. Did the residents display as much wisdom in the furnishing of their tables as they have in the building of their houses, they might live as comfortably here—as far as health is concerned—for eight or ten years, as they could in Europe. The inevitable sherry and bitters, brandy and soda, and full animal diet indulged in three times a day, combined with want of exercise and a rather high temperature, induce disease which is hardly climatic although the victim may call and think it so. All do not err in this way, but most of those who sicken have indulged in too high living. Those who are temperate and exercise discretion in exposing themselves to the sun and rain keep their health. A little languor by the end of summer, becoming more pronounced as a rule the longer one stays here, is perhaps the only climatic disease a sensible man need suffer from.

The bountiful supply of rain we have had this summer has undoubtedly had a beneficial effect on the public health, and has probably averted some epidemic which in times of great drought is the frequent accompaniment of famine. At the commencement of the rains catarrhs and diarrhœa attacked many of the European children, probably on account of the fact that until then they had never lived in a damp atmosphere. Several cases of acute inflammation of the external auditory canal have occurred, and from its frequency it might be described as putting on an epidemic character. It terminates in copious purulent

discharge and temporary impairment of hearing. We may mention three cases of congestion of the liver from exposure, one of hepatitis and fever imported from Swatow, one of jaundice from suppression, one of rheumatic fever and alcoholism, and several of ephemeral fever, dyspepsia and diarrhœa. No case of primary syphilis has occurred among the residents. We had one death—of a child from hydrocephalus. The resident European population may be estimated at about 150.

In offering our report on the health of the floating population during the six months from April 1st to September 30th we have to observe that we do not include in it the crews of the steamers frequenting this port. Amoy not being a terminus for the principal lines of steamers, they rarely stop here longer than a few hours, or at the most one or two days. The examination of their crews would therefore be of no value in the statistics of a health report.

According to our tables we find that from April 1st to September 30th there entered our port and were subjected to medical observation 164 vessels of different nationalities, Continental flags predominating. Their total length of stay in harbour, or period during which they were under observation, amounted to 2,455 days, giving an average of nearly 15 days for each vessel. These 164 ships were manned by crews consisting of 1,281 Europeans, 407 Malays and Manila men, and 239 Chinese, giving to each vessel an average of 11.75 men, or a total of all nationalities of 1,927.

Among these there were 242 cases of sickness, namely 104 sick on arrival, and 138 cases of sickness acquired while in port. On a general survey of these 242 cases, it was found that the majority were of diseases prevalent in hot climates. The preponderance of climatic disease has according to our experience been less marked during the present summer than during the six preceding, and this may be accounted for by the unusual coolness of the season—the coolest for many years. In every respect the summer has been a very healthy one both for shore and floating population, proving in a negative way that in the absence of any epidemic or endemic influence a high temperature *per se* may be a cause of sickness.

Proceeding to a detailed account of the 242 cases mentioned above, we will classify them as follows:—

1.—*Miasmatic Diseases.*

Intermittent fevers, 48; nearly all of the quotidian type and of a mild character. No cases of remittent or bilious remittent.

2.—*Enthetic Diseases.*

a. 36 cases of gonorrhœa.

b. 8 „ „ primary sores.

c. 26 „ „ constitutional syphilis.

3.—*Diseases of the Digestive Organs.*

a. 49 cases of diarrhœa, all of the ordinary summer type.

b. 5 „ „ dysentery; 1 death. The fatal case arrived here suffering from a third attack, having been previously treated for the same disease in Macao and Sourabaya. The four other cases were also imported in ships coming from southern ports; in fact there has not been a case of dysentery of local origin for several years, either in ships or on shore.

c. 13 cases of congestion of the liver with catarrhal symptoms of stomach and intestines, dyspepsia and constipation.

4.—*Diseases of Circulatory and Respiratory Organs.*

a. 1 case of aortic disease.

b. 4 „ „ phthisis; three of these were in an advanced stage and were taken into the hospital, where two died.

5.—*Diathetic Diseases.*

a. 3 cases of rheumatism.

b. 1 „ „ gout.

6.—*Diseases of the Generative Organs.*

1 case of cystitis.
1 „ „ retention of urine from stricture.

7.—*Diseases of the Integuments.*

3 cases of furunculus.
8 „ „ boils and severe lichen tropicus.
4 „ „ ulcers of the legs.
1 „ „ abscess of the hand.

8.—*Diseases of the Eye.*

6 cases of conjunctivitis.

9.—*Accidents.*

1 case of synovitis from sprain.
1 „ „ periostitis from bruise of leg.
1 „ „ wound.
2 „ „ burn.
4 „ „ sprained ankle.
2 „ „ severe bruises.
1 „ „ fracture of base of skull.

The case of fractured skull was instantaneously fatal; it was caused by a fall from aloft.

10.—*Parasitic Diseases.*

3 cases of tapeworm.
1 „ „ ascarides.

11.—*Other Diseases.*

2 cases of inflammation of external ear.
1 „ „ cynanche tonsillaris.
2 „ „ epilepsy,

One of the Epileptics had œdema of the feet and suffered from syphilis and congestion of the brain.

2 cases of alcoholism.

One case was complicated with ague.

1 case of debility.
1 „ „ adenitis.

Under the head of "Peculiar diseases" we desire to draw attention to the following notes of three cases of a peculiar form of scrotal disease of which we can find no description in the usual authorities. We met a somewhat similar case in Taiwan-fu, Formosa, and DR. THOMPSON informs us that he saw something similar in Swatow, so that it is likely that the disease is of frequent occurrence.

1.—Tin-keu, 72 years of age; native of Tchhoan-tchin, Angkoe; began life as the keeper of a boar; lately he has become a character limner. He is now in his dotage and can give but a very disconnected account of himself and his disease. Four years ago he had an attack of rheumatism; his legs were drawn up by it and he was for a time unable to walk. A year ago had a large abscess in his scrotum which discharged abundantly. Then a pustular eruption appeared on his thighs and flanks; this after discharging healed. Then on either lateral half of the lumbar region close to the spine, two large abscesses formed; these burst, leaving distinct cicatrices. Four months ago when these had healed, the disease for which he applied appeared. The scrotum is much enlarged, dark in colour and rough from numerous vesicles the size of swan shot. The skin covering them is tough, and when pricked a clear straw coloured fluid, rich in albumen, is discharged with considerable projection until the scrotum is reduced to nearly its normal size. After a day or two the fluid re-accumulates and can again be discharged with a similar result. The cellular tissue of the scrotum can be injected through a canula placed in one of the vesicles. Otherwise the man is healthy.

2.—Tan-tim-sek, 45 years of age, born in Hai-tan-hi; a lime burner. Twenty years ago had an ague, and within a few days of its onset his legs suddenly lost their power, and an abscess formed in his scrotum. This abscess remained encysted for 3 or 4 years, when it burst, discharging a large quantity of pus and healing kindly. After a year his scrotum swelled and became covered with innumerable vesicles, which when pricked discharged a quantity of clear fluid until it emptied. In a few days the fluid had re-accumulated, but sometimes it was discharged spontaneously. This state of things continued until 10 years ago, when his legs swelled. Three years ago the swelling of the scrotum became less urgent and uncomfortable and did not discharge spontaneously, although it still did so if a vesicle was pricked. During hot weather the swelling of the scrotum and left leg is aggravated. The fluid has the same characters as that in the preceding case. Legs œdematous. Otherwise he appears well.

3.—Tan-se, 30 years of age, native of Tia-lee-sia. Disease began 20 years ago with pain and swelling in the groins; afterwards the scrotum was attacked by inflammation and an abscess formed in it—at the time he had ague. The abscess remained encysted for 10 years when it burst, discharging a sour smelling, milky pus. It soon healed. Now a triangular nodulated swelling occupies Scarpa's triangle on both sides, with no discolouration or alteration of the skin. These swellings feel like enlarged glands, and are quite symmetrical. The scrotum is enlarged, and covered with vesicles discharging, when pricked, a straw coloured albuminous fluid. With the exception of a liability to ague during cold weather he is healthy.

The only well known disease these cases resemble is elephantiasis, and they are possibly forms of this, in which the retained matters, instead of being pent up in the cellular tissue and becoming semi-organised, find their way to the surface and appearing there invite the patient to effect their discharge. In all the cases abscess preceded the formation of the vesicles and may, by breaking down the areolæ, have allowed the fluid to enter the superficial layers of the cellular tissue.

Leprosy is very common in and about Amoy, as many as 7 per cent of those attending the native hospital applying on account of this disease. So common is it that the people do not look on its victims as objects of disgust to be avoided, but associate with them freely, buying their wares if they are pedlars, patronising them if they keep rice shops, and in every respect treating them as ordinary individuals. Some local laws exist with regard to them, but they are practically ignored. For instance marriage of a leper with another leper is allowed, but forbidden between a leper and a non-leper. The Chinese have a firm belief in the hereditary nature of the disease, but maintain that if lepers marry with lepers alone the race becomes extinct in three or four generations; hence probably the permission for their marriage. On the other hand when a leper marries a non-leper the offspring retain the power of propagating both their species and disease. We understand that there is a fund supposed to exist for the relief of poor people unable from disease to maintain themselves. Lepers are included in its distribution. By the law of the province they are compelled to reside in certain quarters of the provincial city, generally near the gates, and supplement their receipts from the above-mentioned fund by begging and certain taxes they themselves collect. Those who possess the means can buy the privilege of residing where they choose, the money they pay being added to the fund for the maintenance of their poorer fellow-sufferers. These regulations are not enforced, and a leper is as free here as any other subject.

The native doctors acknowledge their powerlessness to cope with the disease; all they pretend to do is to prevent the characteristic disfigurement of the face. To effect this they consign the patient to the inside of a bullock newly slaughtered and eviscerated, where he remains for an hour or so and is then released. *Another remedy is a human placenta cooked and prepared in a suitable* manner. Young women, they say, are more curable than men or old women, and this from the fact that the three or four years' course of prostitution which the faculty recommend is surpassingly beneficial. These remedies appear to us disgusting and ridiculous, but we question whether an *intelligent Chinaman* would not consider the treatment of syphilis by the repeated inoculation of chancre as repulsive and absurd—yet this is even now gravely advocated as a sovereign and effectual remedy by certain scientific physicians in Europe.

Leprosy shows itself in a variety of forms, the principal of which are as follows:—

a.—Anæsthesia of the skin without any apparent alteration in its structure.

b.—Pale patches more or less anæsthetic having an appearance like the common ringworm (Tinea corporis), during cold weather. No swelling or alteration apparent to the touch.

c.—Tinea-like patches varying in diameter from half an inch to many inches, of irregular configuration, the margin red, scaly and slightly ulcerated, abrupt on the sound side but gradually shading off towards the centre, which is usually paler than the healthy skin. These are more or less anæsthetic.

d.—Firm hemispherical elevations varying in size from a pea to a marble, apparently depending on effusion into the derma. Sometimes these are of normal colour, sometimes claret coloured. The latter, especially if situated on the legs or feet, are prone to break down and ulcerate. Anæsthetic.

e.—Claret coloured brawny elevations of irregularly circular outline, and often of great extent—also in the derma, flat on the surface, preserving the same consistence and thickness throughout, and springing abruptly from the healthy skin. Generally completely anæsthetic.

f.—More or less brawny thickening of the integuments of the face, pinnæ or neck. When extensive the skin is thrown into folds and the features acquire the characteristic leonine aspect. Frequently this is accompanied by stillicidium from blocking up of the nasal duct or canaliculi, and loss or impairment of the senses of smell, taste and hearing. Anæsthesia very marked.

g.—Bronzing of the skin.

h.—Atrophy of muscles, and anæsthesia of the superjacent skin, generally in the hand and forearm, and associated with flexure of the fingers, and great loss of muscular power.

k.—Loss of phalanges, from interstitial absorption of the bones.

l.—Loss of digits, complete or in part, from ulceration or sloughing.

m.—Ulcers, generally from injury or breaking down of tubercles in various places, most commonly on the feet, legs or hands. The sores are generally of small extent, but when on the soles of the feet very deep, and unless great attention is paid to cleanliness and the removal of the thick skin in their neighbourhood, difficult to heal. Though situated in anæsthetic patches of skin, these ulcers are often very sensitive *and painful, especially if deep.*

n.—Leprous spots are very generally devoid of hairs; the sudoriparous glands lose their function, but occasionally the sebaceous are unusually active.

These lesions, though distributed at times with a certain regard to symmetry, are not thus arranged in so marked a manner as are those of syphilis and other blood diseases. It is seldom we meet with a case in which only one of these is present; more frequently there is a combination of one or more, but the only constant symptom is anæsthesia. The arms, hands, face, legs, feet, thighs, neck, abdomen, chest, back and genitals are affected as regards frequency in the order in which we have enumerated them. Rheumatic-*like pains, sometimes of a very acute character, often precede or accompany the appearance of the eruption.*

By way of illustrating the disease as it occurs in this neighbourhood we subjoin short notes of fifty cases. Particular care was taken to ascertain the presence or absence of hereditary taint, the chances of infection, or of a history of syphilis. The patients were all poor, and lived on a diet of rice, sweet potatoes, salt fish and salted vegetables, fresh beef or pork seldom forming an article of food.

1.—A coolie; æt. 24; no hereditary taint; at 21 had eruption of ringworm-like spots on his legs; these spread rapidly, and after 2 months appeared on his face. In another month the right arm became affected, and after a year the back of the right arm and right ear swelled. The appearance of the spots was preceded *by itching and a burning sensation, the parts appearing red and swollen. Spots are now of a red colour, most* so at the circumference; they are destitute of hair and do not perspire. Their sensibility is diminished about 2/10ths or 3/10ths. Vision is impaired. Power of locomotion slightly impaired. Otherwise he is healthy.

2.—A boy; æt. 13; maternal grandfather died of leprosy; mother a leper at the time of his birth; she has three sons and four daughters; the other sons are healthy, but her two eldest daughters are lepers. Before the disease declared itself he was liable to unusually deep flushing of the face on the least exertion. Small reddish swellings first appeared on the outer and back part of one hip. After a time spots as described

above (under *c*) attacked his ears, face, feet and hands. When brought, the hair was found to have fallen, the spots unperspiring and retaining about 3/10ths of their sensibility. Muscular power slightly impaired.

Took iodide of potassium and had the spots painted with iodine liniment. After 7 or 8 days' treatment the swelling and redness of the spots subsided.

3.—A carpenter; æt. 60; at 17 had chancre and bubo; married and has had seven children. Disease of 8 years standing; no hereditary taint. His wife became leprous after the appearance of the disease in her husband. Began by a row of bead-like swellings on the forehead, then both cheeks swelled and darkened in colour; this he says was cured by insufflation of native medicines. Soon afterwards his legs and arms became numb and stiff, toes and fingers, feet and hands swelled and darkened in colour, but otherwise he remained in good health. Now his head, face, ears and nose are slightly swollen and itchy, his nails have a dry and withered look, both legs for half their extent are dark, dry and scaly; hands and feet similarly affected; hairs for the most part wanting; 3/10ths of sensibility retained. Parts unperspiring. Senses of taste, smell and sight impaired. Digestion difficult and accompanied by acid eructations. Urine scanty and frequently discharged. Powers of locomotion and endurance diminished.

4.—The wife of No. 3; æt. 47; no hereditary taint; considers her disease the result of infection from her husband, who had been ill 6 years before she was attacked. Was first attacked on the left cheek and ankle in small spots of the ringworm type, centre of the spots pale and insensible, circumference red and slightly sensitive. Day by day the spots increased in size, and after a year the right hand was attacked in a similar way, the disease spreading rapidly. The spots are now red, elevated and stiff to the touch, irregularly round in shape, and the biggest larger than a dollar. Hair fallen, and no perspiration on spots. Sensation almost completely wanting. Otherwise healthy.

5.—Wife of an artificial flower maker; æt. 25; a son and daughter died young; had an abortion at 21, previous to which her husband had had chancre and bubo. Attributes her disease to the abortion, as it appeared soon after that event. Family free from leprosy. Began by loss of power in left thumb, and anæsthesia of the web of skin between it and the forefinger; native medicine produced ulcerations, and when these had healed her body became covered with slight swellings, the face being the last part to be involved. Spots are most prominent in cold weather. The muscles of left thumb are now atrophied; feet, hands and face slightly swollen; hairs fallen on the spots, which however still perspire. The left hand is powerless and insensible to injury. Otherwise she is well.

6.—A student; æt. 23; his younger brother became a leper six years after himself; other relatives unaffected. At 15 disease began by pain in right arm, flexion of the fingers and want of power. At 17 both arms and legs became painful, remaining so for 3 months. At 18 legs lost power. At 20 face and ears swelled. Disease steadily progressed, being rather worse in hot weather. Now his right hand and arm are atrophied, and the "main de griffe" developed. Ears, face and feet are all affected, especially the ears. *There is considerable swelling, but not much alteration in colour. Hair of diseased spots wanting, and scanty* on head and eyebrows; no perspiration from spots. Nails of the feet very rough and soft. Nail of right little finger similarly affected. Nostrils stuffed, sight dull. Decided loss of muscular power. Anæsthesia.

7.—Brother of No. 6; æt. 15; began by pain in left hand and arm; after a month the pain left him, and the limb began to waste and lose power. Now there is much atrophy; the skin is anæsthetic, dry and lighter in colour than the rest of the integument. Hair fallen. Otherwise well.

8.—A pedlar; æt. 27; two sons died in infancy; ill for 7 years; parents and relatives sound, with the exception of a younger brother in whom the disease appeared 2 years after it broke out in himself. Disease began on the opposing surfaces of right thumb and forefinger, by dryness and redness of skin, gradually spreading up the back of the arm. It afterwards appeared on the dorsum of the left foot, spreading up the leg and thigh and invading the body. Next the right foot, then the left hand, and finally both temples were attacked. Altogether he has about ten patches of different sizes. The spots are of the ringworm type, dry, and desquamating in fine powder. Hairs have fallen off. Sight is impaired. Muscular power of affected parts diminished. Feet tender on walking. Anæsthesia very marked. Otherwise well.

9.—A field labourer, and brother of No. 8; æt. 24; ill for about 4 years. Disease began on the back of right hand, spreading up the arm, and on the back of right thigh, by red swollen spots the size of a *cash*, insensible and itching. In cold weather the spots are painful and more itchy. The right hand and arm are now wasted, and the fingers flexed. Spot on the right thigh is red, insensible, and about 4 inches in diameter. Leprous parts insensible, unsweating, and bear no hairs. Senses otherwise normal.

10.—A pedlar; æt. 37; at 30 had a bubo (no chancre) which suppurated and remained open for 11 months. No hereditary leprous taint, but attributes his present state to the bubo. Leprosy began over a year ago, when he injured the sole of his foot; the resulting ulcer did not heal, but spread. The opposite foot ulcerated soon after, and in 7 or 8 months the legs became anæsthetic and weak. Both heels are now ulcerated, each sore being about the size of a *cash*; dorsa of the feet a little swollen and dark. Both legs are unperspiring. Anæsthetic but not completely so. Hairs still in situ. Otherwise well.

11.—A shopkeeper; æt. 28; ill for 7 months; family unaffected; a leper neighbour. Disease began on dorsal surface of the left second and third fingers, with swelling, itching and anæsthesia. Afterwards the bones became exceedingly painful, the pain, redness and swelling increasing during cold weather. Only these two fingers are affected; at present they are red, swollen, paler towards the centre, unperspiring and quite anæsthetic. Hairs defective.

12.—A cowherd; æt. 18; ill for 5 years; knows of no leper taint in his family. Disease began with anæsthesia in the left leg, the bones feeling hot and uncomfortable. During the early part of the night the affected parts would feel cold, and after midnight exceedingly hot. During warm weather he is stronger and more comfortable. The affected parts are dry, hard, unsweating, and deficient in hairs. Colour of the skin is peculiar, everywhere having a leathery appearance. Fingers of right hand flexed. Face and ears swollen. The body and limbs all more or less affected. Muscular power very defective, and spots anæsthetic. Senses unimpaired, and he is otherwise well.

13.—A coolie; æt. 29; had a chancre at 20, and during 3 years had syphilis. At 23 became a leper, the disease being now of 6 years standing. An elder sister died of leprosy, and a younger brother has been affected for about the same time as himself. Began by redness, swelling and anæsthesia of both legs. At first native medicines did him good, but afterwards they lost their effect. During hot weather his feet and legs are attacked with ulcerating pimples which heal on the advent of cold weather. Anterior surface of right leg and the right heel are ulcerated; sores about the size of a *cash*. Anterior surface of left ankle also slightly ulcerated. Both legs as far up as the knee are red, swollen and dry; his body and arms are healthy, but he says his face is about to become affected, being the seat of peculiar sensations, the precursors of disease in other parts. As yet there is no appearance of it. Legs unperspiring and devoid of hair. Senses decidedly dull. Power of locomotion impaired. Retains some sensibility in legs; when brought to the ground has much pain in the soles of his feet.

14.—A pedlar; æt. 22; ill for 7 years. His father at 44 became a leper (his ears, face, feet and hands swelled, and became covered with fine white scales; the hair fell and the parts became unperspiring; he died of fever when 52 years of age). The son got the disease 4 years after it appeared in his father; no other cases in the family. Began on the back of left hand where a space the size of a dollar became red, swollen and insensible, the hairs falling out. During hot weather he is very dyspeptic; during cold weather is subject to ague and swimming of the head. His ears, face and hands are now affected, and desquamating fine scales; a leg and foot are also affected. This man when 18 years of age slept for 5 months in the same bed with his leprous father; and at the end of another 5 months he slept with a man called In. After a time In became leprous, and sleeping with a younger brother give him the disease.

15.—A widow; æt. 65; has had 7 children, 4 of whom are dead; when 58 years of age came to live on Kulangsu with her third daughter, who had been a leper for 5 years; after living with her for 5 years she became a leper, and has now been ill for 2 years. Besides her daughter none of her relatives have had leprosy. Began by heat of skin, followed by redness, anæsthesia and itching, aggravated by hot weather. Skin over malar bones, forehead and back of both forearms bears ringworm-like spots, dry, harsh, unsweating and anæsthetic. For her age she has good health.

16.—A boy; æt. 10; ill for one year; family unaffected; has a leper for a neighbour. Began as a vesicular rash on the face, slightly painful; rash disappeared after 3 days, but broke out on the back of his hands. Face and ears are now swollen and dark red; both hands are also very dark in colour; his knees are dotted over with a vesicular rash. Hairs fallen from affected parts, which do not perspire, but are only partially anæsthetic. He is easily fatigued by walking, and has lost strength.

17.—A field labourer; æt. 58; has had a family of nine, 2 of whom died naturally and 2 were murdered at birth; the others are healthy; no hereditary taint; he has been a year ill. Began by rheumatic-like stiffness of right knee, and general debility. Now he has spots of the ringworm type 2 or 3 inches in diameter on the left hypochondrium, the right elbow and the right knee. They are unsweating and anæsthetic, and the hair has fallen off. An arm and leg are deficient in power, otherwise he is well. This man improved under treatment with hydrarg. bichlor., potass. iodid., and iodine liniment.

18.—A greengrocer; æt. 57; has 3 children, all alive and healthy; married at 40; no leprosy in the family; has been ill for 8 years. Began in the temple and backs of his fingers. At present his face and right hand are slightly red and swollen; his body and legs are covered with leper spots varying in size from a *cash* to a dollar; some of the ringworm type, others of the red, flat and elevated variety. The hair has fallen, and the spots do not perspire. Anæsthesia nearly complete. Nose stuffed, eyes watery. Otherwise well.

19.—A sailor; æt. 46; has had 4 children, 1 dead; 20 years ago had a chancre; no leprosy in family; ill for 5 years. Began like ringworm over malar bone and ears. Now head, face, arms and legs are hard, red and swollen, thickly sprinkled with unusually small elevated spots, which are not so numerous on the back of the neck, hands, arms, feet and legs as on other places. The outer border of the hands and feet bear the cicatrices of old ulcers, and desquamate freely. Hair of affected parts wanting. Face still perspires. Retains a good deal of sensation. Some loss of muscular power. Otherwise well. This case improved very much under treatment with hydrarg. bichlor. and potass. iodid.

20.—A rice miller; æt. 37; has had 2 children, 1 dead; family unaffected; ill for 8 years. Began during cold weather with itching of the ears, so intense that he scratched them to bleeding; itching subsided when the warm weather came. The right arm and leg were early attacked by the ringworm-like eruption, and lost muscular power; afterwards disease appeared over left malar bone as a leper spot the size of a bean. Gradually spreading from this, the whole face became involved; then the left arm and leg were attacked. Last year the nostrils became occluded. The itching is most intense in hot weather, and he occasionally has aching in the parts. The arms, legs and face are swollen, red, dry and insensible, some parts more so than others. Fingers of right hand slightly flexed. He says this hand feels like a stick and not like a part of his body. Hairs have fallen, and parts unsweating. Appetite defective. Otherwise well. This case is improving under treatment with potass. iodid. and hydrarg. bichlor.

21.—A barber; æt. 26; ill for 8 years; no leprosy in family. Appears to have had dyspepsia at the commencement of the disease; says that at that time he had great heat like a fire in his stomach, which, when the disease declared itself, disappeared. Face and legs were first attacked with anæsthesia without eruption. During hot weather dyspepsia recurs, and small ulcers break out on the lips and face; these disappear during cold weather. The parts are dry, red and swollen; neck bears the cicatrix of a leprous ulcer. Nose slightly fallen in. Hair and perspiration wanting. Anæsthesia nearly complete. Power of locomotion diminished. Otherwise well.

22.—The wife of a pedlar; æt. 32; ill for 5 years; had 2 children, 1 dead; no family taint. Began on upper and inner surface of left leg by a red spot of the ringworm type the size of a small bean, but rapidly spreading. After 2 years another spot attacked the skin under left eye. The spot on left leg now measures about 6 inches by 2 inches, that on cheek is the size of a *cash*; spots are red and slightly elevated, unperspiring and devoid of hair; that on leg quite insensible, on face slightly sensible. Power of walking impaired.

23.—A sailor; æt. 30; had 2 children, both dead; no leprosy in family; ill for 5 years. Disease began with redness, great swelling and a little pain in right hand. After 2 months, as the swelling

subsided, the fingers lost power, and became flexed. Last year the front of both thighs became anæsthetic without altering in colour, and the sole of the right foot ulcerated. The muscles of right hand are much wasted, and fingers flexed; face of thighs anæsthetic and itchy but not swollen, the patches, which measure about 8 inches by 8, being paler than the healthy integument. Ulcer on foot still open, and the size of a *cash*. Anæsthesia and loss of hair complete. No perspiration from spots. Legs rather weak. Otherwise well.

24.—A field labourer; æt. 21; ill for about 10 months; no hereditary taint. Began as a small ulcer on each heel; afterwards the surrounding skin for a space about 6 inches in diameter became anæsthetic; then left hand was attacked by anæsthesia, wasting of the muscles, and flexion and attenuation of fingers. At present the implicated parts are anæsthetic, (ulcers painful however) unsweating and devoid of hair. Legs are easily fatigued. Otherwise well.

25.—A boy; æt. 13; family free of leprosy; ill for about 2 years. Began as a small spot just above the right knee; this gradually spread. After a time left leg became affected, almost in a corresponding place. These are still the only parts affected, but the disease has spread so as to cover a space of about 12 inches by 5, the right patch being rather the larger. The margins of the spots are imperfectly distinguishable from the rest of the skin, but the patches are of the ringworm type, the surface included in the ring being mottled with indistinct red and slightly elevated patches having a tendency to desquamate. Anæsthesia not complete. Hairs partly fallen. Spots sweat in parts. Otherwise well.

26.—A field labourer; æt. 23; ill for 2 years. His father was a leper 8 years before patient was affected, but he does not know much about his other relatives. There are several lepers in his neighbourhood. The disease began, after an attack of ague lasting 10 days, by a copious vesicular rash on arms and legs; the vesicles after 60 days burst, leaving their site dry and anæsthetic. The face, arms and legs now bear over 30 firm, elevated and brownish red spots, some smaller, others larger, but averaging the size of a *cash*; they are unsweating, devoid of hair, and nearly completely anæsthetic. Otherwise well.

27.—A coolie; æt. 50; no children; ill for 2 years; no leprosy in family, but a good deal amongst neighbours. Disease began on the right foot by ringworm-like spot of anæsthesia, at first red and swollen. Gradually the face, legs and arms were attacked by similar spots. The patches now vary in diameter from 2 to 7 inches; they are of the ringworm type, and incline to desquamate. Over both malar bones are 5 or 6 small tubercular elevations. Parts are unsweating, devoid of hair, and nearly completely anæsthetic. Otherwise well.

28.—A field labourer; æt. 23; ill for 6 years; no family taint. Began on anterior surface of right arm by a dark red anæsthetic spot, the size of a dollar, gradually spreading. Other parts became involved until arms, legs and face were all affected. Last year had a number of abscesses on his face. Now both hands are dry, dark red and their muscles atrophied. Face and ears are still covered with the half healed remains of last year's abscesses. Some of the leper spots are much elevated, others but slightly so; they are small, but very thickly placed and dark coloured. Both thighs have spots a foot in diameter, of the ringworm type. Parts unsweating, devoid of hair and almost completely anæsthetic. Smell and sight are dulled. Otherwise well.

29.—A female slave; æt. 30; ill for 5 years; was sold when quite a child, and knows nothing about her family. Her owner's father died of leprosy, and she attended on him. She has had one child, who was killed at birth. The disease began as a difficulty in breathing through her nose in warm weather. Afterwards her face, ears, feet and hands became red, swollen and anæsthetic; nose has fallen in; face, arms, hands and legs are swollen, hard, red and anæsthetic. A large ulcer on left leg. Ears are much swollen. The hands and feet are not so thick skinned as the other parts but are darker. Perspires still. Hairs fallen. Anæsthesia complete. Smell and taste much impaired. Muscular power but feeble. Otherwise well.

30.—A carpenter; æt. 33; ill for a year; no family taint, but he had three leper neighbours who were brothers, and he associated much with them. The disease began by swelling, redness and anæsthesia

in the right hand and foot, and difficulty in walking, from pain referred to the deeper structures of the foot. After a time the left hand and foot and the face were attacked. Last year, before the disease had spread, he perspired in remarkable profusion during the hot weather, but the succeeding cold weather made the skin very dry and harsh and more anæsthetic. The disease involves both hands and arms up to the shoulders, (*the muscles of hands atrophied*) and both feet and legs to the ilia. The appearance of the arms and legs is like that of ringworm in cold weather, scattered over with patches slightly elevated, indurated and dark, about the size of a *cash*. Integument of face much thickened, ears similar. The back of the neck is dotted over with small indurations *the size of beans*. *Implicated parts* are unsweating and devoid of hair, but not completely anæsthetic. Muscular power of arms and legs much impaired. Under treatment with hydrarg. bichlor. and potass. iodid. the small elevations on the arms, legs and neck disappeared, and he is now much improved.

31.—A pedlar; æt. 41; has a family of 8, all well. Has been ill for 6 years; no hereditary taint, but had a leper neighbour, now dead for 5 years. The disease began as an anæsthetic spot on the back of the right heel, gradually extending. During hot weather he has some rheumatic-like pain in the patch which *is the only part of his body affected*, but it has now extended to a surface 4 or 5 inches in diameter, which has lost its hair and is unperspiring. Anæsthesia complete. Otherwise well.

32.—A field labourer; æt. 23; ill for 3 years; family unaffected. Disease began on the right elbow as a red *insensible spot, which has gradually enlarged to the size of a dollar*, is inclined to ulcerate superficially, and is of the ringworm type. There are also spots on the front of right wrist, right cheek, and outside of left hip, and two small spots inside the left knee. With the exception of the first spot all these are brown, elevated and flat on the surface. *The hair has fallen, and sweating does not occur.* The spots retain very little sensibility. Otherwise well.

33.—A field labourer; æt. 19; ill for 2 years; no family taint, but lived in the same house with a leper, who has been dead for nearly 3 years. The disease began on the outer surface of *the left hip as an anæsthetic spot the size* of the palm of the hand, which gradually spread, assuming the ringworm form. Another appeared on the right palm. The hair has dropped, and the parts are unsweating and anæsthetic. In the affected places the muscular power is defective. Otherwise well.

34.—A *field labourer; æt. 54;* had 5 sons, 1 of whom died in his eighth year of convulsions, others alive; ill 18 months; no hereditary taint. Disease began in front of both hips as a close-set rash of tubercles, insensible and swollen, and enlarging daily. After a time the face and hands were similarly attacked. The spots are now dry, red, and *much elevated, varying in size from* a bean to that of the palm of the hand, and irregular in shape. The spots are very numerous, especially on the legs. The face, ears, neck and arms are similarly affected; they are unsweating, devoid of hair, and insensible. Muscular power is much impaired. Otherwise well. Under treatment by hydrarg. bichlor. *gr. 1/12, combined with potass. iodid. gr. 5, thrice daily*, this patient has recovered 5 parts in 10 of sensibility.

35.—A boatman; æt. 39; ill for 12 years; had a daughter who died in infancy; no lepers in his family, but has a leper neighbour. Disease began by starting of the anterior muscles of right thigh, accompanied by *pain; afterwards it declared itself* by hard elevated spots, first on the ears, then on the face. It developed itself very gradually, and not until a year ago did the limbs become affected. Now the hands and feet, face, ears and neck are of a dark brown colour, and the skin is thickened and rough. Muscles of thumb slightly atrophied; *feet somewhat swollen; skin of the legs thickened;* a ringworm-like spot exists on the left thigh, but there is no appearance of disease where the muscular twitching occurred. Hair has fallen. Spots perspire a very little, are insensible to pain, but, except on left forefinger and left big toe, the patient can detect a body touching them. Muscular power much impaired. *Otherwise well.*

36.—A field labourer; æt. 22; ill for three years; no family history, but has a leper for a neighbour. Disease began as an anæsthetic, ringworm-like patch on the right thigh, gradually spreading; hand afterwards became affected. Both hands and arms to the shoulders, and feet and legs to the ilia are anæsthetic; the skin *is thickened and hard;* the thumbs and second fingers of both hands are ulcerated, fingers flexed, muscles of hand atrophied; right big toe has fallen off; ulcer on outer side of right foot near the little toe;

the left leg larger than the right from swelling; diseased parts desquamating, and dark brown in colour; large ringworm-like spots on both thighs, unperspiring, devoid of hair, and nearly completely anæsthetic. Nose is stuffed, taste defective. Muscular power lost to the extent of 9/10ths. Otherwise well.

37.—*A field labourer; æt. 16; ill for 2 years; family and neighbours unaffected.* Disease began after an ague, by anæsthesia of hands and feet, and an eruption of ulcerating pimples, which did not heal until the advent of cold weather. The limbs below knees and elbows are anæsthetic; legs sprinkled with about 20 small ulcers, several small tuberculated swellings on them, which, judging from experience, he says, will ulcerate. Both arms and the face have a smooth, slightly swollen, thickened, dark skin. The parts are unsweating, devoid of hair, and anæsthetic. Muscular power much impaired. Otherwise well.

38.—*A pedlar; æt. 31; has 3 children, all well; paternal uncle died of leprosy, and a neighbour is* leprous; ill for 6 years. Disease began with shortness and difficulty of breathing; afterwards the ears, face, hands and feet became anæsthetic. The skin on face and ears has now an œdematous look. Left arm as far as elbow has a dark coloured skin, and on the outer surface of the wrist there is a hard elevated patch. Hips are anæsthetic but not altered in colour. Hairs fallen. Unsweating. Left arm quite insensible. Other parts nearly so. Muscular power very defective. Otherwise well.

39.—*A cadger; æt. 32; ill for 8 years; had no children; family and neighbours free from the disease.* Both legs first became anæsthetic and uncomfortable, and about a year ago an eruption like ringworm attacked the back of the neck, and itched much; it was not bigger than a *cash*. A ringworm-like patch of the same size afterwards appeared on the inside of the right calf; then the legs, hands and face in rapid succession became similarly affected. Now the patches are hard, elevated and anæsthetic; both legs as high up as the ilia are thickly strewn with them; they are of irregular shape, varying in size from a bean to a dollar; skin very dark. Both forearms, especially over ulnar surfaces, are similarly affected, but the spots are smaller, and they appear to be more in the subcutaneous cellular tissue than in the skin. Neck, face and ears much swollen, and studded with small tubercles; skin of the neck thrown into folds by the great swelling. The parts still perspire, but are devoid of hair, and almost completely anæsthetic. Muscular power much impaired.

40.—A field labourer; æt. 32; ill for 4 years; his mother died 8 years ago of leprosy, of the red, swollen and ulcerative type. In him the disease began with pain and sensation of heat in his arms and legs. After 2 years the limbs became anæsthetic and covered with ringworm-like spots. There is now muscular atrophy in hands, and flexure of fingers; back of fingers thick and dry; four fingers slightly ulcerated; the forearms, though not atrophied, have a dark thickened skin. Both legs up to the ilia are covered with ringworm-like spots varying in size from a dollar to a plate. There are 15 smaller spots on the back and belly. Forehead and cheeks red and swollen; sensation of heat in bones of legs and face. Parts unsweating, devoid of hair, and almost insensible. Muscular power very defective.

41.—A rice merchant; æt. 24; ill for 12 years; no hereditary taint. Disease began in the left heel, the skin of which cracked and ulcerated, healing during the hot weather; afterwards the hands, arms, feet and legs were attacked. Now the diseased places are very anæsthetic; dorsum of left foot much swollen; second toe has ulcerated off, and the place has cicatrised; the sole of the foot has an ulcer the size of a *cash*, and the heel where the disease began is very dark in colour. Legs and right foot unaffected. Both thighs bear large ringworm-like patches. Both arms are anæsthetic, but unaltered in appearance except at the elbows, where on both sides are ringworm-like spots 7 inches by 3. Affected parts devoid of hair, unsweating and anæsthetic. The left leg is very weak.

42.—A field labourer; æt. 26; ill for 2 years; no hereditary taint. Disease began as anæsthesia of right forearm. After 2 months the little and ring fingers of the right hand became flexed, and the anæsthetic place atrophied. Ringworm-like spot 4 inches by 2 has now appeared on the upper and outer surface of this arm; rest of the body unaffected. The parts are devoid of hair, unsweating and anæsthetic.

43.—A druggist; æt. 25; ill for 10 years; relatives and neighbours unaffected. Disease began as anæsthesia of left leg and right arm. The diseased places are now all of a dark red colour, and the skin

elevated and hard. The front of the chest retains a little of its original appearance, but it is studded with many small tubercular swellings. Ears, neck and face swollen, dark and rough, and face sprinkled with small tubercles; skin of both arms dark and thickened, and the muscles slightly atrophied; a darker patch on inner surface of right brachial region. Back, scrotum, and legs similarly affected. Abdomen has no tubercles, but is very dark in colour. Perspires to some extent. Hairs fallen. Slight amount of sensation retained. Intellect is dull. Muscular power impaired.

44.—A field labourer; æt. 28; ill for 12 years; was sold when young. Disease began as an anæsthetic patch over left patella, gradually extending. This is now about 8 inches by 3 in extent, the skin dry and harsh, something like cold weather ringworm; the muscles of this leg are rather smaller than those of the right; the patch is devoid of hair, unsweating and anæsthetic. Left leg is weak. Otherwise well.

45.—A fishwife; æt. 39; ill for 5 or 6 years; her husband gave her a venereal sore which healed in 10 or 15 days; has had 4 children, of whom 2 are dead; the eldest died at 10 months, from inability to suck, the others are alive and healthy; no hereditary taint. The disease began by redness, swelling and itching suddenly coming on while employed in washing; this did not subside, and gradually the arms and legs, hands and feet were involved. She suffers from rheumatic-like pains in cold weather. Many of the diseased spots are now red and swollen, the centre paler than circumference; her ears are thickened and hard; face bears 6 red and swollen patches; both forearms shew ringworm-like spots; feet are anæsthetic though skin has the normal appearance; ringworm-like spots on the legs. She perspires a little. She is devoid of hair, insensible to pain, sight impaired, eyes watery, and taste defective; short of breath and easily fatigued; liable to ague. Much improved, about one half sensibility restored, by treatment with hydrarg. bichlor. and potass. iodid.

46.—A field labourer; æt. 23; ill for 8 years; no hereditary taint. Disease began as a vesicle on right elbow, which bursting ulcerated and extended. After a time four other vesicles appeared round the original ulcer, these also broke and ulcerated; afterwards had twitching of this arm, followed by gradual atrophy. The wasting is now very marked, the skin insensible, the fingers flexed; no great alteration in colour; the ulcers have healed; rest of body unaffected. Part perspires a little, is devoid of hair, and in parts slightly sensible, in others insensible. Wearied by exertion. Power of forearm quite lost.

47.—A field labourer; æt. 26; ill for 2 years; no hereditary taint; several leprous neighbours. Disease began as desquamation of outer surface of right ankle, and the formation of an ulcer there, which is still open; afterwards anæsthesia attacked his legs, face and right forearm, which latter also atrophied. He has an ulcer on the sole of the right foot, and another on the right thumb; skin of right foot thickened; a small patch of thickening on right knee; the whole of right leg more or less covered with ringworm-like patches; in other places anæsthesia without apparent change in the skin. Right arm up to shoulder partially anæsthetic and covered with the ringworm-like spots; fingers powerless; thumb slightly flexed; left leg as high as the ilium is dark in colour and anæsthetic; left forearm atrophied and anæsthetic; forehead and cheeks anæsthetic, dry, swollen, and flecked with red spots; right ear swollen. The parts are devoid of hair, unsweating and anæsthetic. Muscular power much impaired. Taste and smell very defective.

48.—A field labourer; æt. 30; ill for 7 years; has 2 children, alive and well; a grand-uncle died of leprosy 30 years ago. Disease began as a red, swollen, anæsthetic spot the size of a dollar on the outside of right knee. After a year an ulcer formed on the sole of right foot. A short time ago a Chinese doctor salivated him with mercury, when his body and limbs became covered with ulcers which, however, soon healed. Now both legs up to the ilia are very dark in colour, and the right is much swollen, the popliteal skin being œdematous; ulcers on right instep, right forefinger and sole of right foot; left leg desquamates a dark epidermis; muscles of both forearms and hands are atrophied, and fingers flexed; distal phalanx of left little finger has fallen off; face and ears thickened and dark; cicatrices—dark and pale—in many situations. Parts anæsthetic in varying degree, devoid of hair, and unsweating. Nose is stuffed; senses otherwise good. Muscular power much impaired.

49.—A shopkeeper; æt. 29; has one child; ill for 10 years; his father has had a leprous spot, dark, unperspiring and insensible, on his left knee for 30 years. A leper neighbour died 10 years ago. The disease began as a small itchy and anæsthetic spot behind the right ear; after 5 years the front of the right thigh became anæsthetic without any apparent alteration of skin. Six months ago his face, arms, legs and back became red and swollen, and affected with ringworm-like spots. The face and ears are now red and swollen; neck sprinkled with small red spots; back of neck much swollen. There is a red swollen spot the size of a dollar, with pale centre, on the upper ulnar surface of right arm; two similar spots on left arm; on right lumbar region a larger patch; on upper gluteal region, on both sides, ringworm-like spots; on left thigh a spot, and many on left leg. Parts are devoid of hair, unsweating but partly sensible. Last year they were completely insensible, but have now somewhat recovered. Sight, taste and muscular power defective.

50.—A blacksmith; æt. 26; no children; ill for 3 years; no hereditary taint. Disease began as a red anæsthetic spot on the pad of the distal phalanx of right ring finger. After a short time the little finger was attacked; then the muscles of the hand atrophied. Now the right hand, ring and little fingers and corresponding parts of the hand as high as the wrist are insensible, and the skin dry and shrivelled. The other parts of the hand are not so affected, but the whole has atrophied. Middle and ring fingers flexed. Hair has fallen; hand unperspiring and deficient in power. Otherwise well.

Of these 50 cases, 13 could attribute their disease to a hereditary taint; 4 attributed it to infection, and in 5 there was a history of syphilis. Syphilis we think may be dismissed as a cause. Ten per cent. of the general population are syphilitic and the lepers are no exception. That leprosy is hereditary every one who has seen much of it will at once admit, but few believe it to be infectious. Without direct experiment or the careful collection of extensive statistics the enthetic nature of any disease is difficult to prove or disprove. Such an argument as the case of a leper living with his wife for many years and not infecting her, though often adduced as a proof, is by no means conclusive against infection. We know of a leper marrying a healthy woman, and years afterwards she became a leper also; yet we cannot consider this as proving the case for infection. That everyone cannot be infected is no reason why some one may not so suffer. The three necessaries for the operation of any specific poison must be borne in mind in discussing such a subject, namely the person to be infected, the peculiar condition of the body fitting it for infection, and the poison. We do not say that leprosy is an infectious disease, but we think that the opposite conclusion has been arrived at too hastily and on very imperfect data. As a matter of fact, we have made many observations which could be used in constructing an hypothesis in favour of infection.

We have found treatment by iodide of potassium and the bichloride of mercury, combined with local stimulants, very efficacious in many instances, especially where the disease was not far advanced, but was confined to effusions into the skin. It is difficult to say whether improvement has ever taken place where atrophy of muscular tissue has occurred, but it is probable that the same treatment is of use in that form also. Could we combine this medication with change to a healthy residence and improved food, we believe it would be as successful as that recommended by Dr. Beauperthey. We do not suppose the oil of cashew advocated by him possesses any specific virtue; it owes its curative power to its irritating qualities, and probably iodine liniment or cantharides are as efficient. Mercury in very small doses, combined with iodide of potassium, an irritant to the leprous spots, change to a healthy locality, good food and cleanliness, form, we consider, the proper treatment for leprosy, and in most cases are sure to do good.

Dr. J. R. Somerville's Report on the Health of Foochow (Pagoda Anchorage) for the half year ended 30th September, 1871.

Materials are few for a Report on the health of this anchorage during the past season. This is attributable not only to the decrease in the shipping, but also to the extreme mildness of the summer, which has been the coolest remembered here. Indeed until the months of September and October, when the monsoon changes, there were few serious medical cases at all. The anchorage, from the physical conformation of the country and the presence of a sea-breeze throughout the hot season, is in general healthy, and this year it has been even more than usually salubrious.

I must state at the outset that I am fully alive to the importance of these Reports. They will in a few years form a complete Medical History of China, and I have therefore been careful to advance no opinion, and to state nothing as a fact, of the correctness of which I am not convinced from personal experience.

I.—Climate, Temperature, &c.

Table showing Mean Temperature and Mean Barometric pressure for the months of:—

April.		May.		June.		July.		August.		September.	
Barometer.	Ther.	Barometer.	Ther.	Barometer.	Ther.	Barometer.	Ther.	Barometer.	Ther.	Barometer.	Ther.
30.034	66	29.979	75	29.944	81	29.929	83	29.890	82	29.995	79

These observations were taken at the Custom House, Pagoda Anchorage, by the officer in charge—three observations daily; viz., at 9 A.M., noon, and 3 P.M. This condensed table is obtained from the monthly mean of the three daily readings. The observations are taken in the shade.

Analysis of the Table.

As to temperature, it will be noticed how extremely low the indications of the thermometer are, and with these figures before one it seems at first sight unreasonable to complain of heat. But the fact is that the feeling of heat has very little connexion with the heat as indicated by the instrument. In close, muggy weather when there is no wind, and consequently little cutaneous evaporation, every one feels exceedingly hot and uncomfortable, although reference to the thermometer may show that the temperature is very moderate. The fact is particularly noticeable at this port. With the exception of the rainy season (May and a small part of June) we have, as a rule, a sea-breeze setting in daily about noon. The forenoon is very hot and still; about midday the breeze comes, and immediate relief is experienced. The thermometer, however, does not fall, but on the contrary goes on steadily rising until it attains its diurnal maximum about 3 P.M., and the result is not altered by placing the instrument in the wind. The pleasant feeling of relief is, no doubt, easily explainable by the cooling of the surface of the body by evaporation of the cutaneous perspiration. At all events I am convinced that the general salubrity of Pagoda Anchorage is in a great measure due to this health-bearing breeze.

The daily range of the thermometer in the hot season is very limited, about three degrees being a fair average. The minimum is touched about 8 or 9 A.M. and the maximum about 3 or 4 P.M. in the course of the 24 hours. Thus, during the night the thermometer alters little, although the comfort experienced from the land-breeze down the river at night is great indeed.

II.—*Diseases.*

Nosological Return for the six months ended 30th September, 1871.

DISEASES.	April.	May.	June.	July.	August.	September.	Total.	Died.	REMARKS.
I.—General Diseases.									
Schedule A :—									
Small-pox,	—	3	—	—	—	—	3	—	
Intermittent Fever,	3	7	4	2	4	2	22	—	
II.—General Diseases.									
Schedule B :—									
Rheumatism,	2	5	2	1	3	—	13	—	
Syphilis,—Primary,	1	—	10	1	2	2	16	—	
" Secondary,	1	1	4	1	1	—	8	—	
Phthisis Pulmonalis,	—	1	—	—	2	—	3	—	
III.—Diseases of the Nervous System and Organs of the Special Senses.									
Sunstroke,	—	1	—	—	—	—	1	—	
Cerebral Congestion,	—	1	—	—	—	—	1	—	
Paralysis,	—	—	—	—	—	1	1	—	
Neuralgia,	—	—	1	2	—	—	3	—	
Anæsthesia,	—	—	—	1	—	—	1	—	
Convulsions,	—	1	—	—	—	—	1	—	
Ophthalmia,	Numerous Cases.						—	—	
Tetanus,	—	—	—	—	—	1	1	—	Idiopathic. Trismus continued 29 days.
Diseases of Ear,	—	1	2	—	—	1	4	—	
IV.—Diseases of the Circulatory System.									
Functional Disease of the Heart,	—	—	—	—	1	—	1	—	Distressing palpitation.
V. & VI.—Diseases of the Absorbent System.									
Bubo,	1	2	2	1	—	—	6	—	
VII.—Diseases of the Respiratory System.									
Catarrh,	1	3	—	—	3	3	10	—	Only the more severe cases recorded.
Bronchitis,	1	2	1	—	—	3	7	—	
Asthma,	1	—	—	—	—	—	1	—	
Pleurisy,	—	1	—	—	—	—	1	—	
Pertussis,	—	—	—	—	—	1	1	—	
VIII.—Diseases of the Digestive System.									
Dyspepsia,	17	9	9	8	10	11	64	—	
Dysentery,	2	2	—	1	6	6	17	1	The fatal case of Dysentery was a chronic one, with extensive ulceration of the lower bowel and excessive hæmorrhage from the rupture of vessels.
Diarrhœa,	5	6	15	6	10	1	43	—	
Hæmorrhoids, Colic & Constipation,	Numerous Cases.						—	—	
Worms, Lumbricus,	2	1	—	3	1	4	11	—	
——— Tænia,	—	—	—	2	2	—	4	—	
Hepatitis,	—	—	1	—	1	—	2	—	
Congestion of the Liver,	—	4	—	—	—	—	4	—	
Enlargement of the Liver,	—	1	—	—	—	1	2	—	

DISEASES.	April.	May.	June.	July.	August.	September.	Total.	Died.	REMARKS.
IX.—Diseases of the Urinary and Generative Systems.									
Gonorrhœa,	7	7	6	2	2	4	28	—	
Cystitis,	—	1	—	—	1	—	2	—	
Stricture,	Numerous Cases.								
Hydrocele,	1	—	—	—	—	—	1	—	Tapped and injected tinct. iodine, sac closed.
Orchitis,	—	1	2	—	—	1	4	—	
X.—Diseases of the Cellular Tissue and Cutaneous System.									
Phlegmon and Abscess,	1	4	4	2	2	1	14	—	Only abscesses of considerable size indicated. Injected the two largest, after incision, with a solution of carbolic acid with most favourable results.
Ulcer,	Numerous Cases.								
Lichen,									
Herpes,									
Acne,									
Boils,									
Unclassed.									
Debility,	—	—	—	1	2	—	3	—	Definition—"Uniform exhaustion of all the organs of the body, without specific disease." *Nomenclature of Diseases.* London, 1869.
Delirium Tremens,	—	—	2	—	—	—	2	—	Both cases treated with the Hydrate of Chloral. Results most satisfactory.
Wounds and Injuries.									
Wounds,	Numerous Cases.								
Sprains,									
Contusions,									
Burns and Scalds,									
Tumours,	—	1	—	—	—	—	1	—	Removed by operation.
Fractures,	—	1	—	—	—	1	2	—	Both were compound and were treated with carbolic acid applied carefully on Lister's method. Results most satisfactory.

	Population.	*Cases.*	*Died.*
Grand Total,	1,774	309	1

Analysis of the Nosological Table.

The cases are taken from a population, including shipping, of about 1,774, and refer to residents and shipping only. I have no opportunity of obtaining accurate returns of native practice. In the classification of disease I adopt the form issued by the Admiralty for the use of Naval Surgeons:—*Nomenclature of Diseases.* London, 1868.

The diseases marked "numerous cases" are of such daily occurrence that I have been unable to tabulate them, and indeed in the great majority of cases this, even if possible, would serve no good purpose. A general reference to them will suffice, and there is only one that I will mention particularly, viz. boils. Boils are especially prevalent in the hot season, and all classes of the community are liable to them. They sometimes occur without any known cause, but new comers and patients recovering from illness are peculiarly the victims. To ladies they are especially annoying, on account of the disfigurement they cause, and the train of irritative symptoms to which they give rise. I have noticed that persons with blue eyes and fair skin are much more liable to them than are those of darker complexion. They are, I think, essentially asthenic in type, and require generous diet and a fair allowance of stimulants. Amongst drugs, the chlorate of potash does admirably, combined with a bitter tonic such as calumba. Iron and quinine are required in many cases. Instances of true carbuncle are very rare.

The three cases of small-pox were mild varioloid, and required little or no treatment. They occurred in well-vaccinated subjects belonging to one of Her Majesty's vessels, and the disease was clearly traced to a native bazaar where the men had been enjoying their leave on shore. There has been nothing that can be called an epidemic among the foreign community in my experience at this Anchorge. Small-pox is epidemic among the Chinese in the spring and sometimes also in some of the winter months. I have had cases in foreigners at Christmas. Pertussis occurred amongst European children in the autumn, and at that time the characteristic "hoop," was often heard from the native children in the sampans.

Intermittent Fever.—Twenty-two cases of ague appear in the table. Many of these were imported, but a considerable number occurred in residents. This suggests the question how, if the generally received doctrine that this form of fever depends for its cause on marsh miasmata be accepted, is it that so many cases come up in a locality possessing the physical characters of this Anchorage. The land is high, the soil dry, composed of hard red clay and disintegrated granite, affording a perfect natural drainage, and our dwellings are placed on dry elevated sites. Yet it is by no means uncommon to find a resident on the top of a hill in a paroxysm of ague. I have reason to believe that causes other than marsh miasm give rise to this form of fever. I often notice during the hot season cases in which exposure to the sun, combined with hard physical and mental labour, induces a paroxysm in all respects identical with what is called "malarious" fever. The stages are the same, and the attack recurs next day or the day after at about the same hour, and yields to the same treatment, namely large doses of quinine. But I have seen cases where there was no exposure to the sun, no physical exertion, and nothing but mental anxiety, and especially a mental shock, to originate true ague. The fact that ague occurs in countries and districts that are not marshy has recently been noticed by Dr. COLIN in his enquiry about the fevers of Rome,* and more fully by Drs. OLDHAM and BALESTRA.†

The result is that we really know very little as to what "Malaria" is, and that the terms "Malaria" and "Malarious" express rather our ignorance than our knowledge of the cause of the phenomena.

Sunstroke or *Heat Apoplexy.*—The latter term is probably the more correct, because we find cases exhibiting all the characters of sunstroke, although the patients have not been exposed to the direct rays of the sun. This season has been unusually cool, and there was fortunately only one case. The treatment was immersing the body of the patient in a hot bath, and at the same time applying ice to the head. From my experience, I do not think that pulmonary congestion need be apprehended after the use of the hot bath. On the contrary, by combining the bath with the cold douche or ice to the head the convulsions cease and the patient recovers consciousness in a very short time.

Tetanus.—This was an extremely anxious case. Rigid trismus was maintained for 29 days, opisthotonos was present once, and the spasm of the laryngeal muscles, which continued more or less during the whole period of the trismus, was very painful and exhausting. Bronchitis afterwards appeared as a complication. The patient recovered under the most careful nursing (I place this first), large quantities of stimulants, chiefly brandy and champagne, and strong fluid nourishment. Drugs were of little use except to relieve symptoms. The hydrate of chloral answered admirably at first, in relieving spasm and procuring rest, but it had to be discontinued when great debility set in. Calabar bean was tried and had also to be given up in consequence of its tendency to produce nausea. Vomiting would, at that time, have caused a fatal result from the rigid closure of the jaws, and the great debility present. Morphia then did well.

Dyspepsia.—These cases are of every-day occurrence, and show the highest figures in the table, but there is only one form of it which from its great frequency in China needs special notice. In cases of torpidity of the liver from temporary causes, the patients describe themselves vaguely as suffering from

* *Traité des Fièvres Intermittentes.* Par Leon COLIN. Paris, 1870.

† *What is Malaria? and Why is it more intense in Hot Climates?* By C. F. OLDHAM, M.D., Assistant Surgeon, H. M. Indian Forces. London, 1871.

Researches and Experiments on the Nature and Origin of Marsh Miasm. By Dr. PIETRO BALESTRA. Rome, 1868.

"liver". In the vast majority there is nothing organically wrong, but merely a temporary sluggishness of the gland from various causes, and the treatment is obvious enough when the cause has been ascertained. True organic disease of the liver will be noticed in another part of this Report.

Dysentery.—17 cases. This disease, fortunately, is not very common among the residents, though we meet with numerous, and mostly imported, cases in the shipping. In my experience it is only when dysentery is chronic that, as a rule, it is serious, and difficult or impossible to treat successfully. Recent cases, treated from the beginning, yield readily enough. The type of dysentery here is peculiarly the asthenic, and it is astonishing to observe in how short a time a strong and healthy subject is pulled down. As to treatment, ipecacuanha in doses of not less than 40 grains can alone be trusted. It may be retained by means of a small quantity of opium taken internally and a mustard plaster applied to the epigastrium. Every one must have observed that a large dose of ipecacuanha can often be retained more easily than a small one, and as it is of the utmost consequence that the drug should not be rejected for at least an hour after ingestion, this fact is very important in the treatment. The effect of these doses of ipecacuanha is truly marvellous, rapidly relieving, in the great majority of instances, all the symptoms, and altering entirely the character of the dejections. Dover's powder in small doses does good in the interval. In acute and sub-acute dysentery I have found astringents always hurtful. In chronic cases I have found much benefit from very small doses of castor oil, enemata of tincture of opium with mucilage, and, when ulceration of the lower bowel is present, of solution of morphia with acetate of lead. When there is serious hæmorrhage from ulceration through the coats of vessels, a concentrated solution of tannin in glycerine, given also by enema, checks the bleeding and at least prolongs life, but when the disease has gone on to this extent, treatment of any sort is necessarily rather hopeless. The fatal case in the table was one of this kind. In chronic dysentery, depending upon functional or organic disease of the liver—a not uncommon variety —*the treatment is directed to improving the condition of that organ. In all cases diet is of course of the* greatest importance, and stimulants are, in general, required almost from the beginning of the disease.

Worms.—Worms are the great pest of foreign children at this port. So general, indeed, are they that when I see a child fretful and looking ill without any other cause to account for it, I usually give a dose of santonine, and in the majority of instances lumbrici come away, and the little patient is relieved of all the symptoms. Worms are also constantly apt to recur, and a child, after getting quite well for the time, may be as bad as ever in a month or two. I am not, at present, prepared to speak decidedly as to the cause of this great prevalence of worms among foreign children in China. If it arose from objectionable articles of food given to the children by the amahs, native children ought to suffer still more, but I have not sufficient native practice to enable me to decide. By far the most common variety of worms here is the lumbricus. We meet with a good many cases of tænia in adults, and here the extract of male fern is generally effectual.

Wounds and Injuries.—Wounds, sprains, contusions, burns and scalds are merely indicated in the table as "numerous cases." Two of the wounds were by fire arms, and got well satisfactorily, with only trifling surgical interference, under the application of carbolic acid. All the wounds of any consequence were put under this treatment. The two fractures were compound. The first was a compound comminuted fracture of the tibia, and the splints were removed on the 21st day. The second was a compound fracture of the *tibia and fibula. Both cases were treated with carbolic acid applied most carefully after* LISTER'S manner. There was scaredy a drop of suppuration in any of them from first to last. From its disinfectant properties, carbolic acid is peculiarly useful in the hot season in China, when wounds, even with every care, are apt to become offensive.

III.—General Remarks.

On the subject of the general principles of treatment especially with reference to climate, I would remark that here most diseases, either from their very commencement or at an early stage of their progress, put on the asthenic form. This fact is observed not only in the case of the old residents, but also in that of the immigrant or seaman just arrived. This low type of disease is not therefore wholly the

result of long continued climatic influences, and I shall be glad to hear whether this is found to be the case at the other ports. The treatment indicated is of a more stimulating and supporting kind than is required in temperate climates, and, other things being equal, is commenced at an earlier stage of the disease. In a state of health, light, sound claret is probably the best beverage for table use in the hot season, and residents in the east are, I think, all the better for generous diet and a fair amount of stimulant at meals. Malt liquors do well with some constitutions, and totally disagree with others. With regard to the use of tobacco, I do not think that any general rule can be laid down; each must judge for himself its effects in his own particular case. In the hot season, and especially during the day, smoking, except in great moderation, is, I think, on the whole injurious; but in cases of great bodily or mental exertion, and particularly when a clear brain has to be kept up under the strain of severe and prolonged mental anxiety, a cigar to the smoker is invaluable.

IV.—Remarks with special reference to Seamen.

As we have much to do with the shipping population at this Anchorage, I will conclude this Report with a few remarks with special reference to that section of the community.

a. Water.—The water of the River Min, freed from organic impurities by precipitation with alum, or, better, by proper filtration, or both, is quite wholesome both for drinking and cooking purposes. It is, in my opinion, to be preferred to that obtained from the local springs—so called. The high lands of this Anchorage—and there is very little else than high land here—are simply universal graveyards, and *à priori* it might be inferred that any springs that exist are more or less contaminated by decomposing animal matter. Be this as it may, the fact is that the river water, in the experience of the residents and shipping, is found to be perfectly wholesome. In no instance have I been able to trace disease to this source, and in the case of vessels in port using river water, and others condensed water only, there has not been any appreciable difference in the frequency of diarrhœa and dysentery among the crews. In the case, however, of ships laying in a sea stock of water, the supply should be obtained from the Minjan rivulets, because this water can be pumped into the tanks clear, without the inconvenience of freeing it from sediment.

b. Malaria.—A question very frequently asked in the hot season by captains and officers of ships at this port is, "Is it safe to sleep on deck?" To this the reply as a general rule is in the affirmative, with the adoption of proper precautions against taking cold. As already indicated, there are no malarious influences to be dreaded, but one must guard against a sudden chill. In the ships visiting this port in the summer there are usually good awnings spread, night and day, fore and aft, and this practice cannot be too highly commended as a means of preventing disease. With an awning above him, a man sleeping on deck in flannel pyjamas and jacket, and having a blanket ready at hand, enjoys a safe luxury. But the practice of sleeping all over the deck, where perhaps there may not be an awning, should always be condemned, while means should be taken to afford the seaman a cool night's repose without the chance of a chill.

c. Provisioning of Ships—Lime Juice.—That lime juice should be at all required in the mercantile marine has been an opprobrium to British legislation for shipping ever since preserved meats and vegetables have been obtainable at a cheap rate. It is no wonder that our American neighbours, to whom lime juice in the services is unknown, indulge in quiet pleasantries at our expense on this point. With regard to the sanitary question little need be said, because it has been abundantly proved that lime juice, however pure, is not by any means an infallible protective against scurvy; and moreover merchant captains know by experience that their men can be kept in a much better state of general health by supplying them with fresh meat and vegetables two or three times a week, than by keeping them upon salt provisions and lime juice. Economy, therefore, is the only thing to be considered, and I think it can be proved that lime juice may be made unnecessary in the merchant service with an actual saving to the owners, and that if the legislature assumed the revision of the scale with the view of abolishing lime juice, it would economically prove a positive good. It could be effected merely by the substitution of fresh preserved meats for a portion of the salt provisions now issued, and by the introduction into the scale of a sufficient allowance of a good, cheap, preserved vegetable. I would not recommend the abolishing of salt provisions all at once, because the very

suddenness of the change would probably give rise to a good deal of grumbling and discontent among the crews. So great is the improvement in the manufacture of preserved provisions, that Australian mutton, cooked and in tin, can be put on board ship in London at 5¼*d.* per ℔, and fresh raw beef, also in tin, at 6*d.* In this beef and mutton there is no bone.* Salt meat costs in London from 6*d.* to 8*d.* per ℔, and this includes bone which forms, on a fair average, about 25 per cent. of the whole. For the vegetable element we have not far to look. Carrots are perhaps the best antiscorbutic we know, and they contain, besides, a large amount of nutriment. They are also cheap enough, for they can be put on board in London at 4*d.* per ℔ in large tins, and 4½*d.* in small ones. A stock of fresh carrots and Swedish turnips could also be taken from port. They keep a long time, and the tins need be opened only when they were finished. They could be stowed in sand in any space available. Moreover, when, as at present, lime juice is served out, an extra daily ounce of sugar is given with the daily ounce of lime juice to render it palatable. This ounce of sugar per diem is irrespective of the daily allowance of two ounces—the lime juice, in fact, rendering it necessary. This item of expense would therefore be done away with. But perhaps the best argument on the ground of economy is that fresh provisions and carrots would take up less room on board than is occupied to the same end under the present system. This is a matter rather beyond my province, but I am assured by ship-masters of much experience that the fact is as I state it. In the case of ships, too, requiring to take in provisions in China, from the increasing facilities of intercourse between Australia and this country, it is to be expected that they will shortly be able to do so at little over the rates stated.

d. Disease in general with special reference to Seamen.—Under this head, and as regards its bearing on the origin, aggravation and propagation of disease, I am sorry to be obliged to state that the merchant seaman is by no means always remarkable for habits of personal cleanliness. In the hot season especially, anything that interferes with a due performance of the functions of the skin communicates its baneful effects to the organs of circulation and digestion, and disease is the consequence. The antipathy to soap and water which characterises many merchant seamen, if not positively the origin is at least the agent in inducing some and aggravating many diseases; and the dirty flannel shirt, in which the seaman too often alike works and sleeps, has much to answer for in a sanitary point of view. I am happy, however, to say that this state of matters is not universal, and that in the mercantile marine there is a growing improvement in this respect.

e. Diseases most frequent among Seamen.—These are dyspepsia, diarrhœa, dysentery, fever, usually of the intermittent type, diseases of the liver, rheumatism, and cnthetic disease in all its forms.

1. *Dyspepsia.*—Under this I include all functional disorders of digestion without the complication of organic disease. This class is, therefore, a very large one, and little need be said of it with special reference to seamen.

2. *Diarrhœa* is very common in the hot season, but, when not dependent upon organic lesion, is usually of the ordinary summer variety, and amenable to treatment by small doses of castor oil and tincture of rhubarb, or if that is not sufficient, to aromatic chalk powder with a little morphia and a vegetable astringent. Catechu is the best in my experience.

3. *Dysentery.*—This is one of the most common diseases among seamen, and is usually imported. It is often very severe, but usually amenable to treatment under proper conditions. The establishment of a seamen's hospital by the community of Foochow and the Anchorage has assisted us much in encountering this formidable disease successfully.

4. *Fever.*—This is usually of the intermittent type, and, in the case of seamen, is generally imported. I have had several cases of true typhoid, but comparatively speaking they are very rare. During over nine years practice at this Anchorage I have not seen a case of typhus either afloat or on shore. Fever of the remittent type is not uncommon, and is usually more obstinate than the intermittent form, but both varieties generally yield readily enough to large doses of quinine, given in the intervals of the paroxysms. In

* I have at present before me a 6 ℔ tin of Australian mutton kindly given me by a captain, as a sample of the mutton supplied to his ship at this price in London, and the quality is excellent. It could also be made up into all sorts of dishes. There is no "flavour of the tin."

obstinate chronic cases I have found arsenic of much value given in doses of 5 minims of Fowler's solution, gradually increased to 10 minims three times a day, the effect being carefully watched. Cases, however, in which quinine fails are quite exceptional. I have seen one instance of what is called Mauritius Fever. It very much resembled a severe remittent, but was characterized by extreme debility, and a tendency to complication in the digestive organs, particularly the spleen and liver, and frequent relapses. The case got well ultimately under a very supporting treatment and quinine, but the recovery was tedious.

5. *Diseases of the Liver.*—Organic disease of the liver is, in nearly all instances, imported. Acute and chronic inflammation, resulting sometimes in hypertrophy and abscess, or in atrophy, are the most frequent. I have found great benefit in most of these cases from nitro-muriatic acid given internally, and at the same time used in the form of the acid foot bath, recommended many years ago in India by Sir RANALD MARTIN. This must be accompanied by proper attention to the other symptoms, and to diet and stimulants. The nitro-muriatic bath I have frequently observed to have an almost magical effect in reducing an enlarged liver. It acts moreover as a general tonic. Mercury is in these cases, I think, quite inadmissible. In cases of organic hepatic disease a change of climate is usually imperative.

6. *Rheumatism.*—This disease, as might be expected, is very common among seamen, and it occurs in all forms and degrees; but cases of acute rheumatism or rheumatic fever are rare. I do not think that any general line of treatment can be laid down. The alkaline treatment, however sound in theory, is, I find, by no means all that could be desired in practice. The hypodermic injection of morphia has in chronic cases proved very useful in my practice. The disease is, of course, among seamen, very often enthetic in its origin, and the treatment is then obvious enough.

7. *Enthetic Disease.*—This, directly or indirectly, form a large proportion of the diseases of seamen, and its bearings are very important, both as regards the health of the men themselves, and the general question of the relations between employer and employed. According to the present Merchant Shipping Act, for disease in general a seaman in foreign ports is entitled to medical attendance at the cost of the owners, but in the case of venereal he has to find it at his own expense. This seems fair enough from a commercial point of view, as this form of disease is self-induced; but the practical results are, as regards the man's health, in many instances most lamentable. The seaman, under the dread of personal expense and the "Captain's knowing of it," conceals the disease as long as he possibly can, and his state is in the end often most deplorable. On the other hand, we every day see instances of the disease which render the man totally unfit, almost from the first day of his engagement, for the duties that he is hired to perform, thus not only throwing his particular duty on the rest of the crew,—already hard enough worked,—but also involving the owners in much subsequent expense. In the army and navy there is no penalty attached to this disease over any other. On the contrary, the men are encouraged to present themselves to the medical officer on the first appearance of the malady, and this practice has been found to work admirably both as regards the health of the men and the general efficiency of the services. This fact is amply established by the Report, published some years ago, of the Commission appointed to enquire into these diseases in the services.

About the end of July 1869, Mr. CARROLL, then H. B. M. Vice-Consul at this Anchorage, issued an order prohibiting leave on shore to seamen belonging to British vessels. This was in consequence of the numerous brawls, sometimes ending fatally, which then occurred, and the frequency of cases of drowning when drunk. On the 20th and 21st of that month there were no less than four cases of drowning. This judicious order has not only fulfilled the ends intended, but, contingently, has proved most salutary in the prevention of disease in general among the crews at this port. Enthetic disease especially has much declined, and the cases which now occur are mostly imported. The numerous forms of illness, also, that almost invariably follow in the wake of the seaman's "spree" on shore have shown a marked diminution. I am satisfied that in a port like this, until some feasible means be found of affording the seaman rational amusement on shore, he had much better be kept on board his ship. At the principal ports in England, the Board of Trade has for some years granted facilities to captains and owners for a medical examination of seamen before shipping them, but unfortunately little advantage is taken of this improvement.

In China some such system is urgently required. A seaman discharged from a ship, and living for any length of time on shore in a Chinese port, is almost certain to contract some form of disease—enthetic especially. The life he leads is extremely favourable to this, and the longer he remains on shore the greater is the probability of his constitution becoming debilitated by a combination of evil influences, and consequently of his being unfit to ship as a healthy man. I have at the present moment, in hospital, a man who shipped in Hongkong as sound and healthy; he tried to do duty on board for a few days, but was then obliged to give up, and at this date, over two months from his shipment, he is not yet fit for work. In this case (enthetic) the disease would have been at once detected by the most cursory medical inspection, and all trouble and expense saved to the ship. If a general system of medical inspection were *instituted in China in the case of men presenting themselves for shipment, disease would be discovered at* the outset, and sent to hospital or treated elsewhere. At all events the unfortunate victim would have some chance of advice instead of, as is too often the case at present, the disease going on unchecked until his constitution is past hoping for.

I have considered this class of disease, among seamen, only in its most general bearings, but it is well to remark that venereal diseases do not, *per se*, put on a more virulent form here than they do at home, and that the bad cases one often encounters amongst seamen are mostly referable to the circumstances already mentioned, which, as I have indicated, are to a great extent preventable.

Dr. Alexander Jamieson's Report on the Health of Shanghai for the half year ended 30th September, 1871.*

The position of Shanghai at the junction of two rapid rivers—the Woosung and Wongpoo—is sufficiently well known to require no description. The surrounding country for many miles in every direction is purely alluvial, intersected by numberless creeks, and studded with towns and villages, the latter chiefly inhabited by agriculturists. Some few foreigners still resident here can from personal recollection justify the application to Shanghai and its immediate neighbourhood of the description—

Sterilis diu palus aptaque remis
Vicinas urbes alit, et grave sentit aratrum.

The soil is extremely prolific, and, except when actually frozen, is under constant cultivation. Rice is grown in considerable quantity, and therefore at the proper season (from the middle of April onwards) the numerous natural swamps are supplemented by fields artificially filled with water. A very large extent of land close to the foreign settlement is thus periodically submerged, a condition in itself highly unfavourable to health, and moreover important as intensifying the action of those causes which on the deltas of all great rivers tend to produce disease. The Shanghai district is therefore to be qualified as "malarious," the convenient term "malaria" being used to designate the mass of describable and indescribable conditions which prevail in the neighbourhood of marshy lands, especially when these are subjected to powerful heat. During the spring, summer and autumn months the fields surrounding us are plentifully manured with night-soil, more or less diluted, which has been preserved in vats until it has attained a stage of maturation judged of by some standard unknown to me. At first sight this would appear to introduce a very hurtful ingredient into our breathing air, and there is quite sufficient evidence that the atmosphere is filled with pungent particles from the ground so treated. But whether it be that the process of maturation is fatal to the life of those germs upon which epidemic disease is said to depend, or that their large dilution with pure air renders them inconsiderable (this latter supposition being, I think, quite untenable), or finally that the original material neither contains nor developes disease germs at all, the fact is that disease can never be traced to this cause alone. Upon this point, which is of considerable importance if only because it is from time to time discussed with some alarm, we have fortunately an authoritative statement by Parkes (*Practical Hygiene* p. 98, *f.*):—

> Owing doubtless to the rapid movement of the air there is no doubt that the excreta of men and animals thrown on the ground, and exposed to the open air, are less hurtful than sewer air, and probably in proportion to the dilution. * * * When fæcal matters are used for manure, and are therefore speedily mixed with earth, there is no good evidence of any bad effects. Owing doubtless to the great deodorising, absorbing powers of earth, effluvia soon cease to be given off. An instance is however on record (Whitby, *Med. Times and Gazette*, Jan. 1862) in which two cases of typhoid were supposed to arise from the manuring of an adjacent field. This is a point on which more evidence is desirable. It is stated in some works that disease is frequently produced by the manuring of the ground, but I have been able to find no satisfactory evidence.

It is well to add that no authentic case of disease arising from the adoption of sewage irrigation has been observed in the neighbourhood of the farms so treated by Messrs. Hope and Denton. The fluid sinks rapidly beneath the surface and is filtered through the soil, the roots of the growing plants appropriating the organic materials while the water drains away. This description is to a considerable extent applicable to the plan of manuring in vogue in China.

* I have been unexpectedly called upon for this Report at a very late period, and it is therefore impossible for me to make it as complete as I should desire. For the statistics upon which it is chiefly based I am much indebted to Drs. Galle, Henderson, Johnston and Little, and to Mr. Twigg, the municipal sexton.

The flatness of the settlement site renders efficient drainage all but impossible without an elaborate system of flushing the sewers. Still it must be remembered that in Shanghai, unlike western towns, no night soil reaches the drains, while a careful scavenging of the streets reduces to a minimum the amount to be carried away by these channels. But the filthy habits of the Chinese, the quantity of vegetable refuse allowed to accumulate in various unfrequented spots whence, after rain, washings are carried into the nearest gully holes, and the constant traffic along the narrow streets, all contribute to render the quantity of matter carried finally into the sewers by no means inconsiderable. The Municipal Council is obliged at intervals to open up the principal sewers in order to remove the accumulations which have failed to reach the river. An inspection of one of the opened channels is sufficient to prove not only the unavoidable defects of the *drainage system but the great quantity of material which reaches the drains. Whatever does escape is* carried into the river. Into the river also through the creeks comes the drainage from the up-country villages and the cultivated fields. The foreign and Chinese shipping in the stream likewise contributes its refuse, and finally the ditches of the native city are partially washed out at each time of spring tides, the filth of all kinds which has meanwhile gathered swelling the list of river impurities. Having these facts before me two years ago, I strongly represented what I considered must be the condition of the Shanghai water supply which is almost exclusively drawn from the river. So far, the badness of Shanghai water was certainly only a theory, though apparently well supported by facts. But the Council having submitted various samples to Professor FRANKLAND, than whom there is no higher authority on questions connected with water analysis, proved triumphantly that instead of being exceptionally bad the water supply, in spite of all that certainly must mingle with it, is exceptionally good rather than otherwise. Thus, as (pending the discussion of a plan for waterworks) the most important to residents, I take Dr. FRANKLAND's decision upon a sample collected "opposite Heard's jetty, tide rising," noting only the constituents likely to have an *injurious influence on health* :—

IN 100,000 PARTS.	ORGANIC N.	AMMONIA.	N. AS NITRATES AND NITRITES.	SEWAGE OR ANIMAL CONTAMINATION.	ORGANIC MATTER IN SUSPENSION.
Shanghai Water.....	.033	.001	None.	None.	.96
compared with					
Thames Water.....	.039	.001	.355	3,240	Traces.

This is very satisfactory, and drives me to the safe position of asserting that, whether generally contaminated or not, the river is liable to contamination on an alarming scale should any disease such as typhoid, dysentery or cholera break out amongst the natives or on board the foreign ships, or even should an accident happen to a few of the heavily laden manure boats.* The sooner therefore that measures for securing a less questionable water supply are adopted the better it will be.

* "Suspended animal, and especially fæcal matters have produced diarrhœa in many cases. * * * The observations which prove so satisfactorily that the dysenteric stools can propagate the disease, make it probable that, as in the case of typhoid fever and cholera, the accidental passage of dysenteric evacuations into drinking water may have some share in spreading the disease. * * * In 1856 Dr. ROUTH published a case in which the evacuations of a typhoid patient were thrown into a closet the pipe of which passed directly into the cistern of the drinking water, in a well ventilated house at Hastings. No less than 8 *persons were affected with more or less typhoidal symptoms; many of these had not been brought into any personal contact* with the sick person. * * * It seems on the whole most probable that the cholera evacuations, either at once or after undergoing, as supposed by PETTENKOFER and THIERSE, some fermentative change, pass into drinking water or float about in the atmosphere. In either case they are received into the mouth and swallowed, and produce their effects directly on the mucous membrane, or are absorbed into the blood." PARKES:—*Practical Hygiene*, pp. 49, 52, 55, 59.

"A theory has been broached by Dr. SNOW, that the (cholera) poison is swallowed with the food which we eat or the water which we drink. * * * Some striking facts have been collected which warrant the presumption that a most fearful outbreak of cholera in Soho was attributable to the water of a certain pump, contaminated from a neighbouring sewer." WATSON:—*Principles and Practice of Physic*, 4th Ed. v. ii. p. 531.

The same local conditions which I have already mentioned promote the formation of a foreshore which, left wet by the retreating tide, is doubtless a source of danger to health, especially when the still moist and refuse-encumbered ground is acted on by the summer sun. The Municipal Council is however actively engaged in reclaiming the land bordering on the rivers, and I take the opportunity now offered me of noticing that to this as well as to many other operations of great importance to the hygiene of the settlement a manifest impulse has been given since the appointment of a Health Officer. Power to make this appointment was conferred upon the Council by the *Land Regulations of 1869, and under the annexed By-Laws* the certificate of the Health Officer is declared sufficient to authorise the forcible removal of noxious accumulations, and the purification of unwholesome buildings, drains, cesspools, &c. The value of the existence and due exercise of these powers as influencing the preservation and propagation of infectious diseases can hardly be overestimated.

This rapid and general review of our local conditions would be incomplete without some notice of the measures adopted or recommended for the limitation of small-pox and syphilis, which are the only diseases that can be directly combated by legislation. There is no difficulty experienced in protecting the foreign residents from small-pox by vaccination and re-vaccination. Nor do the Chinese oppose any active resistance to vaccination. But they are accustomed to inoculation, and so far as I can ascertain, confluent small-pox so seldom follows the usual operation that there is no very strong inducement to change the system. In other words they would as soon have their children vaccinated as not, but they do not much care. The important point is that so long as inoculation is practised small-pox is preserved. Early last year the Intendant issued a proclamation forbidding inoculation within the foreign settlements, but from want of means to enforce it, it either has already proved or must eventually prove a dead letter. For several years there has been a vaccination depôt within the city, and the numbers brought there have latterly increased largely. The Municipal Council in September 1870 opened a like institution in the Maloo, which, however, was little known before the end of February 1871. During the succeeding two months 180 children were vaccinated, and then, the small-pox season having closed, the attendance, as was expected, fell off. Had I any suggestions to make as to the better working of this depôt, this would not be the place to make them. But as a matter of fact I have not. Every inducement is held out to parents, a comfortable room is provided, the vaccinators attend regularly, handbills are circulated and notices posted, and full information as to what is to be done is given upon the back of each certificate of vaccination, which latter has to be brought back and signed when the vesicles are approved.

With regard to the limitation of syphilis—the registration and periodical examination of public women, together with the establishment of a Lock Hospital, are the means which at once suggest themselves. Vested interests, however, stand in the way for the present, but this difficulty will I have no doubt be in time removed. *Dr. Edward* HENDERSON, *in a report on Prostitution in Shanghai drawn up in the early part of* this year, states that the public women and brothel proprietors (or rather renters) expressed perfect willingness to submit to regulations which provided for the establishment of a hospital, the house to house inspection of native prostitutes (by a Chinese "doctor"), and the prosecution of any brothel-keeper found harbouring a girl suffering from venereal. And in a Mémoire pour servir drawn up by Dr. MASSAIS in 1869 I find it asserted that—

> Almost all the brothel-keepers (in the French Concession), and especially the keepers of houses frequented by sailors, gladly welcomed the proposal (of a weekly visit of inspection). Moreover I am persuaded that those who hesitate could easily be brought to a favourable view by explaining to them that subjecting their girls to examination would almost guarantee the success of their establishments.

It would seem, therefore, that there is little chance of the brothel-keepers deserting the foreign limits should legislation be directed toward the limitation of contagious disease. The records of private practice

are of course unavailable for the purpose of obtaining an estimate of the prevalence of venereal disease in Shanghai, while men in the public services who suffer from gonorrhœa, chancroid or primary syphilis are almost invariably treated as consulting-room patients. They do not therefore appear on the "sick state" of any of the services, and the possibility of a record is thus destroyed. It may however be stated in general terms that constitutional syphilis of a rapidly destructive character is rare amongst foreigners, that the vast majority of cases coming under the head of venereal are specific or non-specific blennorrhagias, and that the practice of keeping native mistresses, though not rendering contagion by any means impossible, has a material effect in limiting it, if only on account of the habits of superior cleanliness acquired by these women.

Before attempting an analysis of the statistics furnished by private practice, the records of the General Hospital, the sick-states of the public services, and finally by the burial returns, I would guard against a misapprehension to which these figures may give rise. In estimating their value the reader must remember that the average age of the foreign residents, excluding children, is not above 30, that there is very little poverty and no misery amongst them, that frequently bad cases are sent home or to other ports, where some recover and some do not, that no estimate can be formed of the latent effect of residence here in shortening life, which may not declare itself except in a constitutional debility of which we have no means of taking account; and on the other hand that the majority of the patients in the General Hospital, and of the few who die on board ship, are sailors or persons otherwise exposed to vicissitudes of weather, &c., and whose habits are far below the average of healthfulness. Whether these conflicting considerations balance one another it is impossible to say, but all should be kept in mind.

DR. BARTON in his Report on Shanghai for the last six-monthly period contrasted the rates of mortality over a long series of years. It is therefore unnecessary for me to go over this ground. The following is the gross return of the burials of foreigners during the period under review:—

APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	TOTAL.
3	8	5	10	17	9	52

According to the census of 1870, there were 1,982 foreign residents in the settlements, and it may be assumed without sensible error that this number represented the population during the half year. The gross total of deaths would therefore show a rate of 52.47 per thousand per annum. But to this many important corrections have to be applied. The returns show:—

Accidental Drowning,	10	cases.
Murdered by a Stab,	1	,,
Execution,	1	,,
Suicide,	1	,,
Imported cases which arrived only to die,	2	,,
One Native and two Eurasians buried in the foreign cemeteries,	3	,,
Deaths of children under one year old,	4	,,
Total,	22	cases.

The number of deaths from disease amongst foreigners of adult and early adult age is therefore reduced to 30, and the annual death rate, upon the same census estimate, to 30.27 per thousand. But even this reduced estimate is too high, for the General Hospital, which of course furnishes the great majority of deaths, takes in a considerable number of sailors, while the floating population is not included in the census of residents. When the enumeration was made last year there were 1,101 individuals on board the ships in harbour. If this be taken as a fair average, the death rate over the whole resident and floating population is still further reduced to 19.46 per thousand per annum, for the six months from April to September.

The tentative character of these calculations renders them unsatisfactory. I will now take the records of the General Hospital, where at least I shall have reliable figures to go upon.

Months.	Admissions.	Deaths.	Causes of Death.	Deaths from Special Classes of Disease (see below).
April,.....	18	1	Phthisis,.....	0
May, ...	26	6	*Typhoid* (1), *Small-pox* (2), Injury (1), *Typhus* (1), Morbus Addisonii (1),...	4, or 15.39 per cent.
June,.....	18	6	*Hepatitis* (2), Phthisis (2), Pneumonia (1), *Sunstroke* (1),.....	3, or 16.66 per cent.
July, ...	24	1	Phthisis,.....	0
August,.....	32	7	*Delirium Tremens* (1), *Dysentery* (3), *Typhus* (2), Tumour of the Brain (1),.....	6, or 18.75 per cent.
September,...	33	6	*Suppurative Hepatitis* (1), *Dysentery* (1), Injury (1), Pneumonia (1), *Meningitis* (1), Aneurism (1),.....	3, or 9.09 per cent.

As I am chiefly concerned about the cases of fatal disease which may with more or less probability be ascribed to climatic causes (hepatitis, dysentery), to local causes (typhoid, small-pox), and to the action of the sun, no doubt aided by personal habits, (typhus, sunstroke, delirium tremens, meningitis), the distinction between these classes being difficult and often impossible to draw accurately, I will exclude from the above total of 27 deaths, giving a mortality of 17.88 per cent on admissions, the following cases:—Phthisis (4), injury (2), Morbus Addisonii (1), pneumonia (2), tumour of the brain (1) and aneurism (1). I have therefore 16 cases to consider, while the hospital death rate, regarded with reference to the mortality from the special diseases classified above, is reduced to 10.59 per cent on the total of admissions.

For the six months the hospital records show 10 admissions for hepatitis, distributed evenly through five months, May being excluded. Of these, 2 died in June and 1 in September. In each month from April to July there was one case of typhoid. That admitted in May died. Of diarrhœa there were only 4 cases—one in each month except July and September. Twelve cases of dysentery were admitted, of which 3 of the August cases and 1 in September were fatal. Up to July there was one case per month; in August 5 cases, and in September 3. Of typhus there were 5 cases—1 (fatal) in May, 3 (of which 2 were fatal) in August, and 1 in September. Of intermittent, remittent and "bilious" fevers there were 24 cases, namely 2 in May, 3 in June, 3 in July, 7 in August, and 9 in September. None of these was fatal. Massing together sunstroke, congestion of the brain and meningitis, there were 6 cases—2 in June, 2 in August, and 2 in September. In June 1 case was fatal, and 1 also in September. It is perhaps hardly fair to lay delirium tremens to the charge of the climate, but it is worth noticing that out of 10 admissions, the one fatal case occurred in the middle of the heat of August. Small-pox disappeared in May. In April there were 2 admissions, and in May 4 (2 fatal).

Of venereal cases (under which I include those classed as "bubo" [4], gonorrhœa [1], and periostitis [1]) there were 15. To these should probably be added 3 cases of stricture, and 2 of disease of the testicle.

So far as the hospital records shew, disease in August would appear to have been more fatal than in the other months. As a rule the Shanghai bills of mortality are heaviest in August and September, especially in September. (See page 41).

I will now take the public services in which, although the men are constantly exposed to the vicissitudes of the weather and temperature, they are well clothed, well fed and properly housed. The out-door staff of the Customs at this port is 32 in number. During the half year there were 22 cases of illness necessitating sick leave, generally for a very short time. Among the cases of importance for this Report were 5 of congestion of the liver, namely 2 in May and 1 in each of the months June, July and August. Of these one only needed removal to hospital. Of remittent and intermittent fevers there were 9 cases—3 in May, 2 in June, 3 in July, and 1 in August. One of these was sent to hospital. A case of stricture, depending upon violent inflammation of the urethra induced by the injudicious use of injections for gonorrhœa, was sent to hospital.

One case of melancholia terminated in suicide. April shewed only one case (bronchitis), and September only two (1 of diarrhœa, and 1 of non-specific sore throat). The deaths were three—1 from drowning, 1 from disease of the heart, and 1 by suicide. The River Police have been healthy. Among the 5 foreigners in the force, 1 suffered from slight intermittent fever, 1 from a transient diarrhœa, and 1 from slight inflammation of the neck of the bladder.

The strength of the foreign police force of the English and American settlements is 34. The men were healthy during the six months, a fact due doubtless to the precaution adopted of keeping them in barracks during the heat of the day except when special circumstances arise, and even then guarding them carefully from unnecessary exposure. Punkahs and an unlimited supply of ice are provided for them at the Council's expense. Facilities are also afforded for preparing coffee and other beverages at any hour of the night. 14 cases of febricula occurred, of which 7 presented themselves in July. The heat of the weather, and slight indiscretions in eating or drinking account for these, which were all of a very trivial character. Of diarrhœa there were 5 cases, 3 of which occurred in July; and of dysentery 3 cases in August and September. Intermittent fever appeared in September, when 2 men were attacked. Besides the coughs, boils, &c., &c., which do not require notice, there were 2 cases of specific orchitis, and 1 of periostitis—also specific. It will be observed that the so called climatic diseases were here ill represented. The case was different with the French police, but I am unable to explain the fact. The strength of the French force is 38, out of which remittent and intermittent fevers gave 5 cases, 2 of whom were sent to hospital, while chronic diarrhœa and chronic dysentery supplied each 1 case treated in hospital. There was one case of hepatitis, and 7 (2 of which appear in the hospital returns) of various affections of the digestive organs, not specified.

The deaths mentioned in the preceding pages as having occurred at the General Hospital are to be understood as not necessarily occurring during the six months, but as deaths on the admissions during that period. Following therefore Dr. BARTON'S example, I subjoin a list shewing the causes of death in each case which had a fatal issue in Shanghai during the months from April to September, without reference to the time at which disease appeared. Most of these are certified; for the rest I am indebted to the burial register :—

Small-pox,	2	Convulsions,	2
Typhus Fever,	4	*Congestion of the Brain*,	1
Typhoid Fever,	1	Sunstroke,	1
Remittent Fever,	2	General Debility,	1
Dysentery,	4	Morbus Addisonii,	1
Infantile Cholera,	1	Cancer of Stomach,	1
Diseases of the Liver,	2	Disease of Hip-joint, and hectic,	1
Cardiac Disease,	4	Drowning,	10
Cardiac Dropsy,	1	Stabbed,	1
Aortic Disease,	1	Suicide,	1
Aneurism,	2	Execution,	1
Delirium Tremens,	2	Unknown or not reported,	5
			52

From the statements and figures given above it will be evident that the prevailing type of disease in Shanghai is periodic. In other words disease of a periodic character forms an important element in the returns, while the type presents itself in the course of other diseases presumably not of malarious origin. But it is easy to form too high an estimate of the number of non-periodic complaints which locally seem to put on a periodic character. Allowance has in some cases to be made for a hasty interpretation of phenomena, and in others for the actual presence of remittent or intermittent fever or neuralgia conjoined with the illness on account of which advice is sought. However this may be, it is certain that the cases of disease are comparatively rare in which quinine if not obviously the primary treatment is not a most useful adjuvant. The treatment of the periodic fevers by quinine belongs now to the alphabet of therapeutics, and I am therefore absolved from the necessity of dwelling upon it. It is with reluctance that I oppose the opinion expressed by Dr. BARTON in his report, to the effect that the drug should never be administered in remittent fever while

the pulse is over 100. For this he has the authority of Dr. HEADLAND, who says that "care should be taken to administer quinine at a time when the pulse is soft, and the skin and tongue moist." But cases occasionally present themselves where no delay is admissible, and where the only preparation possible is an attempt to relieve the bowels if they happen to be constipated. The temperature is here a much surer guide than the pulse, and if, as the influence of the drug is felt, the temperature falls while the digestion is not deranged, no doubt need be felt as to the suitability of the treatment. The principle, as it appears to me, is this—that as fever essentially consists in elevation of temperature, quinine being undoubtedly an antipyretic must, so far, necessarily be a febrifuge in general quite as applicable at any assigned stage as preparations of mercury and antimony. Without attempting to explain the several actions of quinine, its effects in acute articular rheumatism, the continued fevers and pneumonia, point to an antiphlogistic virtue only second to its specific virtue in diseases of a decidedly periodic character. Although Shanghai is one of the homes of remittents and intermittents, we shall never, so long as we have no homœopathic practitioners here, be in a position to give a history of unmodified periodic fever. All our temperature curves are distorted by the intervention of quinine treatment, the patient and not the disease being in each instance the primary object of study. Chronic cases of intermittent fever extending over months or years occasionally present themselves, in which, without any notable enlargement of the spleen or liver, and without any considerable elevation of temperature during the paroxysm, a paroxysm regularly occurs at a certain hour every day or every second day. Out of three cases of this kind which I observed during the past year two suffered from attacks on every alternate day, and one on every day. In all three the rigors occurred between 4 and 5 o'clock in the afternoon, and were of short duration, passing rapidly into the hot stage, while the sweating stage lasted for a variable period during the night. Here quinine was obviously hurtful, although freely tried in every imaginable dose. On the other hand the action of arsenic and opium in minute quantites (5 minims of FOWLER'S solution with 5 minims of laudanum four times daily, gradually reduced) was not only permanently satisfactory but remarkably rapid. The anti-periodics less generally esteemed than quinine must therefore still hold an important place in our materia medica.

Some years ago the remittent fever of Shanghai, commonly known as "Shanghai Fever," was frequently of a dangerous and even rapidly fatal character. Quinine in any quantity often disagreed, and it was then necessary to have recourse to turpentine in small doses, which in some instances proved efficacious in arresting the paroxysms. I cannot offer any explanation of the action of turpentine in remittent fever of a low type except by referring to its general stimulant properties. According to MACNAMARA it has long been held in estimation at the Meath Hospital in Dublin, where it is administered in the form of punch in the low stages of (continued) fevers. Its value in the treatment of neuralgia, especially neuralgia of the stomach, was strongly insisted upon by TROUSSEAU *(Clinique Médicale,* 3me Ed. t. ii. pp. 404–406*)*, and WATSON *(Principles and Practice of Physic,* 4th Ed. v. i. p. 663*)* considers that independently of its anthelmintic action it possesses an influence more or less specific over the paroxysms of epilepsy. Lately there has been very little true Shanghai Fever, using the term in the sense in which it was formerly understood. The General Hospital had no fatal case of remittent during the past six months, and of the two in private practice which appear in the burial returns, one was an infant, and the other a neglected Anglo-Chinese child, five years old.

Fatal cases of dysentery were few during the half year, although the disease in a tractable form was of frequent occurrence. MOREHEAD in his classical work, after recommending bloodletting, calomel and opium, &c., before the administration of ipecacuanha in the early stages of acute dysentery, admits that it is often necessary to commence with ipecacuanha in 3 to 6 grain doses, "omitting the preliminary exhibition of calomel and opium and castor oil." Experience in Shanghai is unequivocal as to the necessity for immediately giving ipecacuanha in acute dysentery. The peculiarities of the individual must be consulted when regulating the dose. Where perfect quiet is observed, 5 grains with or without a minute proportion of morphia, repeated every three hours, is generally retained, but when vomiting occurs and persists, an increase of the dose to 10 grains or 20 will frequently put a stop to it. In other cases two or three grains

made into pill with extract of gentian, and administered every hour or two hours will cause no nausea. Occasionally when tolerance cannot be established, and the depressing effects of nausea and vomiting must for special reasons be avoided, it may be necessary to abandon the treatment for a time, but I have noticed that even in these cases the specific action of the drug is not altogether lost. The infusion of the root, it may be remarked, is sometimes retained when the powder is rejected. The ignorance which still prevails at home with regard to the anti-dysenteric virtues of ipecacuanha cannot fail to strike most of the physicians practicing at the China ports. In a matter of so much importance I shall be excused for reproducing here the following brief review of the various plans of treatment, from the pen of Professor MACLEAN of Netley:—

> This remedy, the radix anti-dysenterica as it was called of old, has entirely superseded every other remedy in the treatment of dysentery in all our tropical possessions. The statistics of the British army in India prove in the most unequivocal manner that since army medical officers returned to this old method of cure, giving this remedy in scruple or half drachm doses, the mortality from this scourge of armies in every age and clime has diminished more than one half. British medical officers who have to do battle with this enemy all over the world know the futility of astringents in the "bloody flux of camps." Sir John PRINGLE instructed them on this point long ago. The preparations of opium may indeed sometimes allay pain, but they do not cure the disease; and as for calomel, nearly half a century of terrible experience in India has served to convince the most ardent mercurialists that of all the remedies ever tried in this disease it is not only the most useless but the most destructive. Even that eminent physician NIEMEYER in his great work recommends it; but I presume that this distinguished man does not concern himself much with tropical diseases, lying as they do outside the range of even his vast experience. * * * Ipecacuanha may be used with perfect safety even where the patient is reduced to a condition of great debility, and that too in the full doses above described.

There can be no doubt that some cases of chronic dysentery yield and yield only to calomel and opium, but I have reason to know that even in China the mercurial treatment of acute dysentery is not altogether without followers. There is therefore a reasonable excuse for dwelling at some length upon the matter of treatment. Among the crews of the vessels in harbour, dysentery was during the autumn very common, although when uncomplicated the event was, I believe, in no instance fatal. It should not be forgotten that much dysentery is treated on board ship, and that consequently the dejections of many patients are thrown directly into the river. (See page 34, text and note). There is great difficulty in treating the disease in a satisfactory manner afloat. The rest and quiet which the ipecacuanha treatment requires can seldom be obtained, and the problem of diet is almost insoluble, for the sailor after the privations of a long voyage thinks it unreasonable to starve himself in port. Fresh milk is in case of need purchased by some ships, but these are exceptions, and even preserved milk is seldom at the sailor's disposal. Yet without exaggeration it may be said that milk diet is as essential to cure as is specific treatment.

Hepatitis is of common occurrence in Shanghai, but the form which rapidly runs to suppuration is fortunately rare, and when it does present itself it has generally been imported from the south. There are in China many opportunities of observing the inter-dependence of dysentery and inflammation of the liver, and I would suggest that the medical officers attached to the Customs establishments at the ports should collect all the available statistics bearing on the question. I have recently seen one case of hepatitis of a very serious character in which the disease was obviously secondary to acute dysentery unsuccessfully treated at another port with heroic doses of mercury. Another case in which dysentery was the primary disease, and which was sent away from Shanghai, terminated fatally with what were described as unmistakeable symptoms of hepatic abscess. On the other hand one fatal case of dysentery (in which so far as I know there was no post mortem) was by the physician in attendance pronounced to be secondary to hepatitis. Dr. BUDD's views are well known, as well as the opposition they have encountered from MORENHEAD (*Researches*, p. 365), WARING (*Enquiry into the Statistics and Pathology of Abscess in the Liver*) and FRERICHS (*Diseases of the Liver*; Syd. Soc. Tr., v. ii. p. 114). The enquiry is well worth prosecuting.

The periodic fevers and dysentery may be regarded as endemic. There was during the six months no epidemic disease of importance. Whooping cough, of which I can find no previous record in Shanghai, was imported from Hankow at the end of April, and ran through a number of families. The disease commonly pursued a mild course, and recovery, though slow, was not retarded by secondary complications. One or two adults were attacked, but children were the chief sufferers, and the debility produced by this special cause

added to the usual effects of the summer heat, made change of air more than ever advisable as a restorative. During September and October an ephemeral exanthem made its appearance, and affected large numbers both of natives and foreigners, adults and children. It had previously been unknown amongst foreigners, but the Chinese professed to recognise it as *Fung-sha* or "wind measles." It is difficult to determine the length of the period of incubation, but it would seem to be at any rate not less than four days. The period of invasion was marked by headache, pains in the back and limbs, nausea and general malaise, but without any notable rise in the temperature. There was no catarrh. These symptoms lasted for two days, and on the third day the eruption appeared all over the body, frequently attended with intense tingling. It was papular, and all but indistinguishable from measles except in the want of configuration in the patches. On the third day it began to fade, and continued to disappear until the fifth day, when a furfuraceous desquamation set in. On the third day, however, more or less swelling of the palms of the hands and soles of the feet was observed, but there was no affection of the small joints, and no marked exacerbation following a period of remission. *Fung-sha* is thus distinguishable from rheumatic scarlatina or dengue, while the absence of throat symptoms separates it from rubeola. Convalescence was generally complete in a day or two after the disappearance of the eruption, but in two or three instances among foreigners was prolonged. In a recent number of the *Lancet* (September 30th 1871, page 464) DR. DUNLOP of St. Helier's describes a somewhat similar epidemic which prevailed in Jersey during the spring and summer of this year. He says:—

> Early in the spring a great many patients, children and adults, applied to me on account of an eruption which had suddenly appeared on the face, trunk and extremities. They had no other symptoms of any kind, and said that they felt perfectly well. This eruption * * * varied in colour, being in some cases of a darker and in others of a lighter red. I also observed that in many places, especially on the face and extremities, three or four of the puncta had coalesced forming an irregularly shaped patch.

In some of the early Jersey cases there was sore throat, but fever when present was extremely mild. In June, instances occurred where in addition to sore throat and derangements of digestion, there were injection of the conjunctivæ, lachrymation, coryza and slight cough, fever also being well developed; but as a rule there was no marked constitutional disturbance. It would appear from Dr. DUNLOP's description that no special treatment was required, and this likewise was the case in Shanghai.

The influence of temperature upon the occurrence and fatality of disease in Shanghai is unmistakeable. Bearing in mind that July, August and September are the hottest months of the year, the thermometer in the shade occasionally registering above 100 F., frequently shewing 96°, and seldom falling below 90° during the early afternoon, while the night temperature is rarely below 80°, a comparison of the averages of deaths for the various months, taken over a series of thirteen years, is significant. Taking the half year from April to September, the figures stand thus:—

April,.....	5.8 deaths.	June,.....	16 deaths.	August,.....	20.7 deaths.
May, ...	9.2 ,,	July, ...	19.2 ,,	September, ..	21.9 ,,

I may here with propriety make some reference to the mode of life which prevails amongst foreigners. The habits of the lowest class of residents are very much the same as those of the lowest class in any other seaport town. The effects of those habits are, however, here more frequently and suddenly fatal, on account of the additional hurtful conditions introduced by the malarious atmosphere and the violence of the solar influences. Nothing in the way either of coercion or reasoning can be expected radically to alter the unfavourable conditions into which the rowdy resident and the sailor ashore voluntarily plunge. By legislation we might set a limit to the badness of the liquor they imbibe and to their chances of syphilitic contagion. But this is all. Sun and malaria are uncontrollable, and each individual must take his own precautions against them. Excluding the class just mentioned, the residents are, generally speaking, sufficiently careful in the matter of diet and shelter. They sleep on the second floor, which is a most important point, and imprudence in eating and drinking is, so far as my experience goes, exceptional. Some years ago the late DR. James HENDERSON in a highly coloured pamphlet entitled *Shanghai Hygiene* drew a ghastly picture of the prevalent habits of life and their inevitable effects. But the description

was much exaggerated, and the pamphlet, though written with the best intentions, did, I believe, far more harm than good. Heavy drinking was not then (1863) the rule, and it certainly is not so now. Were the seductive cock-tail abolished, there would be little left to desire. It must not be forgotten that in summer, when the exercise taken in the cooler months is impossible, there is still a constant exhaustion of vital energy due to the extreme heat, and this demands sustaining food. Instinctively during the hot weather the so-called "respiratory" aliments are avoided, but the need for blood-renewing food is undiminished, and in some cases even increased. The enormous loss of fluid by perspiration, though to some extent balanced by a decreased elimination by the kidneys, demands a large supply of drink, and I doubt that the proportion of alcohol which most people take in this increased drink-supply is really hurtful. It is at any rate certain that occasional stimulation is necessary, and it is within every one's experience that when exhausted by any kind of work with the thermometer at 90° or upwards, food, the very sight of which excites loathing, is, after a glass of iced sherry, or what is still better, a little iced brandy and water, eaten with relish and easily digested. I have spoken of the instinctive avoidance of fats during summer, and I have no doubt that the demand for alcohol during the hot weather is just as instinctive. Drs. Parkes and Wollowicz's recent researches prove that although alcohol, either pure or in the form of brandy or claret, does not lower the bodily temperature, it does in moderate doses stimulate the heart's action, and promote appetite without impairing digestion. It does not enable the body to perform more work on less food, though "it may enable work to be done which otherwise could not be so." And this is really the practical point to seize. Each person must be a law to himself, for in different individuals narcotism begins at different epochs, and "the commencement of narcotism marks the point when both appetite and circulation will begin to be damaged." Although writing thus I am anxious not to be considered as an apostle of intemperance. I will therefore quote the conclusion at which the above named observers have arrived:—

> While we recognise the great practical use of alcohol in rousing a failing appetite, exciting a feeble heart, and accelerating a languid capillary circulation, we have been strongly impressed with the necessity of great moderation and caution. In spite of our previous experience in the use of alcohol and brandy we were hardly prepared for the ease with which appetite may be destroyed, the heart unduly excited, and the capillary circulation improperly increased. Considering its daily and almost universal use, there is no agent which seems to us to require more caution and more skill to obtain the good, and to avoid the evil which its use entails.

And finally, it may be remarked that although hepatic congestion and enlargement are common enough, cirrhosis ("the gin-drinker's liver") is rare in Shanghai, a fact inexplicable were excessive drinking the rule, as it has frequently been represented to be.

I am sorry to say that at present I have no opportunity of studying disease among the natives, and consequently I can give no account of leprosy in this district, based upon observations made by myself. At the Chinese Hospital, during the eleven months ended 30th November 1871, there were 27 cases of leprosy treated, and I am informed that these were distributed with tolerable evenness through the months. The average of new cases would therefore be 2.45 per month, but up to the present there has been no special leprosy register kept. Of the 27 cases 24 were males, of whom the youngest was 9 years old (disease of 10 months standing), and the oldest 44 (disease of 4 months standing). The average of age among the males was 25.46 years, and the average duration of illness at the commencement of treatment was 3.2 years. The case in which the disease was of the longest standing was a man of 27 who had been leprous for 24 years. No observation as to the state of the generative organs was made. The shortest period of illness after which advice was sought was one month. This was in the case of a female aged 24, whose brother had died at 30, after being leprous for 8 months. Of the three female cases, one was aged 37 (4 years ill), one was 27 (8 months ill), and the third was aged 24 and had been ill for but one month. Out of the 27 cases there was a family history of leprosy in only two. One was the woman just mentioned, whose brother had been a leper. The other was a man aged 26 (disease of 6 years standing) whose brother was leprous. I am informed that it is only with great difficulty that information can be obtained as to the state of the sexual power and appetite. Leprous women suffer invariably or almost invariably from amenorrhœa and leucorrhœa. No connexion has been traced between the occurrence of leprosy and residence in a particularly

aguish district, nor does it seem that syphilis in the parent or in the individual himself acts as a predisposing or exciting cause. At the same time the Chinese remark that it is only since direct traffic with the south by sea has become easy and constant that syphilis and leprosy have spread in the Shanghai district. What the value of this observation is I have no means of determining. Here as elsewhere the results of treatment have been unsatisfactory. The most that can be said is that arsenic, iron, iodide of potassium and cod liver oil, together with improved diet, arrest the progress of the disease, but do not in the least tend to cure it.

Dr. A. G. Reid's Report on the Health of Hankow for the half year ended 30th September, 1871.

Before alluding to the death rate of this port and the causes chiefly leading to it, and likewise to the special deaths of the past year, a few explanatory remarks about its sanitary condition will not be out of place.

Hankow is built on a strip of mixed clay and silicious sand lying at the junction of two rapid rivers which meet at almost a right angle. The native city covers a narrow triangular shaped expanse and stretches along the banks of both streams; the ancient and chief portion extending along the higher bank of the Han, the more recent running along the lower line of the Yangtsze. The relation of the site of the town to the level of the rivers is of considerable importance, as it varies in the different seasons from a maximum height of from two to four feet during the autumn up to an elevation of from forty to fifty feet during the winter months. In certain years, the probable frequency of which is at present unknown, a large proportion or even the whole of the city is submerged by the autumn floods. Since the opening of the port in 1861 this untoward event has occurred on three occasions, namely in 1866, 1869 and 1870, and in these years respectively the overflow continued for periods of two months, three months and three weeks. Although the flooding may in one sense have been of benefit, by (in the absence of scavengers or efficient drains) clearing away the heaps of filth accumulated in the native streets and houses, it was of unmixed evil to the settlement, where it left the numerous vacant spaces covered with decomposing vegetable debris, which filled the air with exhalations and produced a considerable amount of fever and cachexia. Many of the unoccupied lots even in average seasons continue for several months favourably situated as malarious foci; they lie one to two feet below the level of the roads and raised ground, and when in spring and autumn the subsoil water rises to their surface, it converts them into swamps which soon become coated over with putrefying vegetation exhaling its poisons. Our municipal laws seem powerless to compel the lessees, who are generally at a distance, to remedy the evil by filling up their property; but the Council has at length determined to curtail the swampy period by draining these marshes, and one element of danger will thus be removed from the place.

At a short distance behind, a wall stretches between the two rivers, and in that direction encloses both the city and a considerable piece of land which has been divided into a series of vegetable gardens. As these intervene between the settlement and the open country and are watered at all hours of the day with a rich liquid manure, they constitute a formidable barrier to seekers after equestrian or walking exercise. Besides this, the fragrance of the fields is further increased by the ample supply of material kept stored in open vats and pits, until it has sufficiently matured to act as a wholesome stimulant to the young growing plants. This effectual, profitable, but most disagreeable method of utilising the night-soil of the city population, seems here devoid of special evil consequences to health, notwithstanding that those engaged in the culture of the vegetables constantly respire a highly impure atmosphere. The organic particles they inhale, however, are mostly the products of the advanced stage of decomposition at which the sewage has arrived during its detention in the latrines and pits; and it is possible that, even if the excrement originally contained the germs of zymotic diseases, these would pass through their stage of existence before the solution is thrown into the air, and borne by the wind to mingle with breath and food. It is only by some change which has taken place during this preparation of the sewage that we can explain the usual freedom from severe enteric affections enjoyed by the labourers who apply it to the fields, and dwell in the midst of the effluvia. That dejections accumulating in latrines are a common cause of dysentery in camps, trenches, barracks, &c., is pointed out by Parkes (*Practical Hygiene* p. 440, note), but here while the matter lies exposed to the air in pits and vats it becomes filled with innumerable larvæ, and the "specific germs" must become transformed before the fertilising matter is thrown over the fields.

Throughout the year the thermometer usually ranges from a few degrees below freezing point in winter, to 96° F. in the shade in summer. The hot season commences in the middle of May, and terminates early in September, and during nearly the whole of this time the day temperature in the shade is rarely under 88° or over 94°. Frequently, in addition to the heat, there is a succession of days and nights without a breath of wind to cool the air, and at such times the radiation from the earth after sunset renders the nights even more perceptibly close and oppressive. The past season was a somewhat exceptional one, being characterised by an unusual frequency of overcast skies and cool night-breezes; and the continuity of the high temperature was still further interrupted by a series of refreshing thunder-storms. It is surprising to observe, that while the temperature is little below that of the body, and while exercise only in a very limited degree is taken, nevertheless a considerable amount of heat-producing and reparative material may daily be consumed with wonderful impunity. The intense heat lasts for too brief a period to draw down the punishment which would follow a more prolonged violation of physiological laws; and even if there be commencing functional disorders, they are checked by the cool bracing weather which sets in in October. September was the most trying month of the year, on account of the variability of temperature, and the chilling breezes which set in towards sunset; during it, malarial fevers were very prevalent among the natives, and in a few instances also attacked foreigners.

The English settlement adjoins the portion of the native city which stretches along the Yangtsze. It is solely occupied by foreigners and their Cantonese servants, who are thus cut off from close contact with the other inhabitants and their contagious disorders. The benefit of this separation is seen particularly in the limitation of small-pox, which has been repeatedly and severely epidemic among the natives, without having attacked a single foreigner residing on the concession. On the other hand, when foreigners previously lived scattered throughout the city, not a year passed without a sprinkling of the disease.

The water supply of the settlement is drawn from the muddy river, but before being used for drinking purposes it is precipitated with alum, and then boiled and filtered, precautions which are needful, seeing the risk of its having been contaminated by an admixture of the refuse of the teeming city above, and of the enormous boat population living on the Han. Perhaps it may be owing to negligence in purifying the water that dysentery, which usually infests the native city in autumn, finds its way into the concession. The dejections of the boat-dwellers are thrown into the Han, and those of the city inhabitants are removed in vessels which nightly load at the jetties. During this latter process the contents of the buckets are often spilt, and flowing or filtering through the soil, mingle with the river water. If dysentery germs happen to be present, and are swallowed by subjects prepared for their reception, they multiply in the intestines, and induce the disease. Seeing that one of the most recent writers holds "that infection with a specific germ is the sole cause of dysentery" (NIEMEYER), it is necessary in order to avoid one principal medium of contagion to ensure the withdrawal of impurities from the drinking water.

The European population of Hankow is somewhat fluctuating, but usually averages 110 adults, with from 10 to 20 children. The ages of the former are nearly all included in the period from 25 to 35, while the latter are under 3 years. All are in good circumstances and engaged in easy in-door pursuits. Among a population so constituted the rate of mortality ought to be trifling, unless it be interfered with by unfavourable endemic influences. As the numbers to be considered in estimating the death rate are comparatively trifling, a more correct idea of its causes will be formed if it be taken over a lengthened period, and accordingly I begin with 1865, by which year a large majority of the foreigners had removed from the native city to the concession. From the time mentioned up to the beginning of the present year, the deaths have been 4, 6, 5, 2, 2, 2, in the successive years. Now out of this total of 21 deaths in 5 years, 10 occurred in children under 3 years of age, and 6 of these fatal cases arose from acute dysentery. Among the 11 adult deaths there were likewise 7 who died from the effects of dysentery; 2 died of abscess of the liver, 1 from cirrhosis of liver and kidneys, and 1 from extravasation of urine, which came under notice when in extremis. There is thus a very large proportion of the total mortality of the place to be ascribed to dysentery, and it is most important to note that more than three-fourths of the fatality from this cause happened among the minority who had continued to reside in

the native city, and also that children were the most severely affected, their delicate organisation indicating with greater keenness the insalubrity of such residence. In making this estimate of the deaths, those occurring among the community living on shore have alone been chosen, and accordingly it does not include several which took place on board the tea ships during their brief stay, and nearly all of which were due to dysentery.

Dysentery in a sporadic form annually appears in Hankow and the neighbouring cities along with the rise of temperature in May, but it rarely acquires an epidemic form before the variable autumn season. During the past year, however, some of the elements in the causation of the disease were in abeyance, as the autumnal vicissitudes, instead of leading to the usual number of intestinal disorders among the natives, were more productive of chest affections and fevers. This diminution of dysentery applied more to Hankow than to Wuchang, a distinction which might be due to the streets and houses of the latter having a miserable system of drainage which is not likely to be ameliorated by the style of cleansing which recently swept out the cesspools and ditches of Hankow.

Whatever lowers the general health of a community creates in its members a susceptibility to acquire the disease. Among the natives here such predisposing causes are found in autumn, and are induced by malaria, atmospheric changes, humidity, diarrhœas due to the quantity of gourds consumed, or to these strengthened in years of inundation by a state of mental anxiety and general suffering. The exciting causes have also in this season a favourable opportunity of growing, if their generation depends, as most believe, on the combined action of heat, moisture and decomposing animal or vegetable matter under certain climatic conditions. The low forms of fungi, or what has been termed the "living miasma," so produced, enter the drinking water chiefly through the sewage, being thence conveyed into the intestines to develope and multiply, if a suitable nidus is provided. Looking at the spread of dysentery in this light, it must be viewed as contagious in the same sense as cholera and enteric fever. It is also stated that, of all three, "frustate," non-contagious forms exist, and these are explicable by a change in the quantity or quality of the fermentable matter (*Med. Chir. Review*, January 1870). It is equally necessary, I therefore repeat, to guard against the one as against the others, by looking into the purity of the water supply.

The most striking peculiarity in the progress of this disease is the little tendency displayed towards serious hepatic or splenic complications like to those produced in Indian dysentery. This exemption was met with, although the cæcum and rectum might have been the principal seats of ulceration. In the thirteen fatal cases, the causes of death were more often due to some special condition of the subjects in whom the disease had occurred, than to any excessive malignity of action, or implication of other organs. For instance, in two of the seven adults delirium tremens contributed largely to the fatal result; two were pregnant and aborted, and in one of these evidence of septic poisoning had been produced; in two others again, the patients were worn out by long continuance of their malady and repeated relapses with intervals of health. The seventh was a terrible warning to be watchful, as the patient was considered to have sufficiently recovered to be out of bed, and he had risen thence without any further complaint than a feeling of extreme weakness; but the following morning he was discovered lying dead on his couch, having half filled a pan with blood during the night. I assisted at the post mortem, which disclosed the large intestine filled with blood and studded over with numerous circular ulcers. The enormous percentage of mortality among the children was partially owing to the disease attacking them during the eruption of the teeth, and leading to death through the early supervention of head symptoms, and partly to a weakness of system induced by the effort to rear some of them in a most unhealthy locality. Among the ships the fatality varied, for in one vessel in which the crew suffered from scurvy, three out of eight died; while in one of the gunboats with men in ordinary health, only one out of twenty-two succumbed, and his death was owing to a relapse induced by imprudent exposure and excess.

Regarding the symptoms there is little to be said, except that constitutional febrile signs were often absent, or only a coincidence at the outset, and that the diagnosis of the disease had to be arrived at by inspecting the character and odour of the dejections. Sometimes there was a more or less distinct ten-

derness over a portion of the colon, and straining was also present if the rectum chanced to be involved; but scybalæ and marked tenesmus were rarely met with. At times the disease began with apparently a simple diarrhœa, which after a few days assumed an acute dysenteric character, or, continuing for a longer period, lapsed into a more distinct chronic dysentery.

The medicinal treatment of the disease was simple and satisfactory in most of the cases. It chiefly consisted of large doses of ipecacuanha, half a drachm at least, administered night and morning. Little difficulty was experienced in retaining the drug, provided a full dose of laudanum was previously administered, and if in about half an hour thereafter, when the action of the opiate had begun, the powder was swallowed, and perfect rest and total abstinence from food and drink enforced for some hours. Even if the first dose or two caused emesis, the system soon displayed a wonderful tolerance of the remedy, which continued up to the improvement of the disease. Nitrate of silver was another article much used both by the mouth and rectum, in the more advanced stages of acute and in chronic dysentery. In native dispensary practice as well as amongst foreigners its employment was attended with the greatest benefit, and it is difficult to comprehend the unfavourable judgment passed on such a valuable drug by MOREHEAD in his work on diseases in India. Large enemata of tepid water or of infusion of ipecacuanha powder, or small quantities of creasote rubbed up with a little glycerine and added to the enema, or weak astringent solutions gradually increased in strength, were likewise of advantage, and were used according to the obstinacy, the stage and the indications of the case. In using these injections, if any increased tenesmus or straining followed, the medicament was immediately diminished, but it was rarely found necessary to leave them off on account of their inducing such an aggravation of the symptoms as has led them to be condemned by NIEMEYER (*Text-Book of Practical Medicine*, HUMPHREYS and HACKLEY'S Translation, v. ii. p. 674).

During the present half year three persons have died, two of them adult members of the community, and one the captain of a lorcha. Apart from these, only one of which arose from climatic causes, the health of the settlement, and it may be added of the native city, was satisfactory. So far as could be ascertained there were no other epidemics in the city, beyond a prevalence of whooping cough in spring, and an unusual frequency of continued and remittent fever during the autumn. Comparatively few specimens of the former affection were seen among the dispensary patients, but several were met with in the convent school and elsewhere. Judging of the mortality of the epidemic from these, it must have been very trifling. The weather at the time was mild, and chest complications of no moment; but in three out of twelve cases vomiting was an annoying symptom, and necessitated careful dieting. The principal treatment adopted was that recommended by TROUSSEAU, namely by gradually increased doses of belladonna administered every morning. Its effect in controlling the frequency of the attacks was satisfactory enough, although in one little patient rather severe symptoms followed. The child was a half-caste, three years old, and his parents were warned of the nature of the drug; but they were so pleased with the improvement, that they neglected to bring him as arranged. In about ten days they were greatly alarmed by the appearance of a scarlatinoid eruption quickly succeeded by general anasarca. The belladonna was immediately stopped, the redness vanished in a day or two, and the dropsy after a week; no other symptoms interrupted convalescence.

Fever was generally of the remittent type, and lasted from a few days to several weeks. Even in mild attacks the poison acted severely on the nervous system, leaving an amount of weakness and prostration out of proportion to the febrile symptoms. The cases occurring among foreigners were of no great severity, with the exception of one instance of adynamic fever, which proved fatal under the following circumstances. The sufferer was a young unmarried female engaged in tending native children. The nursery was placed on the ground floor, and close to a badly kept drain, which filled the room with its nauseous odours. The poor girl had had a severe attack of fever in May, which reappeared in an intermittent form during June and July, but notwithstanding her impaired state of health she persevered in her fatiguing duties. At the date of her fatal illness in August her associates, thinking it was only

ague, prescribed quinine, but, no improvement taking place after two days, requested further aid. On visiting her, the pulse was found to be 130, temperature 104°, and there were the physical signs of pneumonia of the left lung. Next day she had a wild unsettled appearance, rambling talk, and large livid patches on the back and abdomen. Stimulants were ordered to be freely administered, but the instructions were not carried out; by the following morning she had lapsed into a state of complete stupor, and expired the same afternoon. The malignant aspect which the fever here assumed was no doubt owing to the impairment of the health by malaria, an impure atmosphere, and previous unsuitable employment. Another fatal case occurred in a native missionary who had for some time suffered from indications of fatty heart. The fever was only a mild attack and the patient was improving, when he suddenly expired after the evening exacerbation. The depressing effect of malaria on an organ already crippled sufficiently explained the sudden collapse. As bearing on the question of the diagnosis of fever, the death of the lorcha captain may be alluded to. In that instance the febrile symptoms arose from stricture of the urethra, but so closely resembled those of paludal origin that they were treated as if due to that cause. After a few days however the patient exhibited his penis and scrotum red and œdematous, and then stated that he had suffered from a stricture for twelve years, but that he had managed to keep it fairly dilated by passing a thick copper wire from time to time. On seeing the nature of the lesion, an effort was made to empty the bladder by a catheter, but without success. It was repeated next morning and evening with the same result; and the following day I saw him in consultation. The private parts and groins had then become black and gangrenous, and the patient was collapsed and insensible. As cases of extravasation of urine sometimes recover under the most desperate circumstances, I cut freely in the middle line of the perinæum and into the other infiltrated textures, and gave exit to an enormous quantity of putrid matter. A catheter could not be introduced into the bladder, but as all chance of further extravasation was now guarded against, there was no immediate urgency. Under the free use of stimulants the pulse at one time seemed to rally, but it did not continue, and death ensued the same evening. The other instance of extravasation I mentioned in alluding to the mortality of the place, occurred in an emaciated opium smoker who had been attached to a native shop. After the rupture had taken place he lay for seven days, in July, without assistance, and was then brought to the hospital with the gangrenous parts swarming with maggots. I succeeded in tying in a No. 3 catheter, and performed the necessary incisions. Although at the time there was high delirium, the pulse and strength were still wonderfully good, but he sank four days after admission. Subsequent to the operation, it was impossible to administer nutrients and stimulants in consequence of the teeth being firmly clenched whenever food was offered. The stomach pump had therefore to be employed, and this diminished greatly the chances of recovery.

The third death arose from phthisis. The only peculiarity in the case was the intense periostitic pains in the upper and lower extremities, which continued for two months, and were unrelieved by large doses of iodide of potassium. No rest could be obtained at night through the use of morphia by the mouth and hypodermically, so chloral was resorted to, and with excellent result. At first half a drachm produced refreshing sleep, but the quantity had to be increased till two drachms were taken, divided into two doses and given at different hours of the night. These draughts were kept up almost uninterruptedly for four months without the soporific action being lost, or any evident ill effect being produced by such considerable doses. Attempts were once or twice made to substitute another narcotic, but they only ended in restless nights, aggravated cough, and entreaties for a continuance of the chloral. I may mention that the patient to whom I first administered chloral was the only native I have yet met with suffering from delirium tremens. He was conducted to the hospital by his wife, who had secured him in a novel manner. A heavy chain was fixed round his waist by a padlock, and to this girdle was attached in front another chain four feet long, which terminated in a weight like a small grindstone. So long as no great restlessness was displayed the patient could, with an effort, lift the weight and change his quarters; but if he became at all obstreperous he was held down, and additional rings of stone were slipped on the chain until he could only gyrate round a fixed point. When he came under notice he had had no sleep for a week, and had kept his neighbourhood awake by his

shouts. Under the use of chloral, given in forty grain doses twice daily for three days, he slept, only awakening when roused to take food. He became perfectly quiet, and left the hospital a free man.

As I wish to refer at some length to the interesting subject of leprosy, I will reserve for a future report some observations I have made on the prevalence of phthisis among natives who are exposed to the action of malaria, which some hold to be antagonistic to tuberculosis.

Cases of Leprosy, indicating the Muscular Condition of the subjects. A continuation of those narrated by DR. SHEARER *in last Report.*

1.—Shu E-Sin; æt. 24; a field labourer, unmarried; admitted into the London Mission Hospital with symptoms of anæsthetic leprosy. States that his parents are healthy and alive, and that he is the first member of the family attacked; but that within the last year a younger brother shewed slight indications of the malady, being then of the same age as he himself was when first attacked. Both reside in the same house, together with eleven of their immediate relatives, and in a village containing about 800 inhabitants, three of whom are lepers. The district whence he comes is low lying and very aguish, and he himself has had repeated attacks, but with this exception his health has been good. He never had eruptions or sores on the skin previous to the present illness. His usual diet has been about two pounds of vegetables and one pound of rice daily, cooked with an ounce or so of oil. He has rarely partaken of pork, and only occasionally of fish. The present complaint began 5 years ago with tingling and numbness in the left fore-finger and thumb; it made no advance during 2 years, but thereafter twitchings and numbness attacked simultaneously parts of the face, neck, extremities and scapular region, and along with this, there was loss of the hair of eyebrows, eyelids and of the diseased skin; these regions likewise became dry and scurfy, and ceased to perspire even in the hottest weather. Sores now broke out on the lower extremities, but they healed spontaneously, and have not recurred during the past two years. The cervical and femoral glands are enlarged, but the former have greatly diminished within the last year. Although appetite and digestion have never failed him, he has notwithstanding been unable to labour, by reason of complete loss of muscular power.

In addition to what may be gathered from the above account, the following symptoms were noted. Apex of heart in fourth intercostal space inside nipple, frémissement and murmur; jerking in carotids; pulse small, feeble, 92. Splenic dulness from sixth rib, and tumour felt a hand's breadth beyond hypochondrium. Blood corpuscles pale, globular, running into masses, and not forming rouleaux or exhibiting biconcavity; white corpuscles decidedly abundant. Urine, sp. gr. 1,018, with a quantity of uric acid crystals sprinkled through the deposit. Twitches and tingling in face and hands. The right cheek, right posterior cervical, interscapular and deltoid regions are more numb and wasted than the corresponding parts on left side; and on the left side, the tongue, thenar and hypothenar eminences, erector spinæ, triceps, extensors of fingers, thigh and leg have chiefly suffered. The hands are emaciated, the fingers straight, flexible, and moving easily, except the little fingers, which cannot be adducted to the ring fingers. The upper lip cannot be elevated or drawn to the right, neither can the angles of the mouth be depressed. The lower jaw is slightly drawn to the left, and can only be jerked to the right but not retained for a second; when projected, it twists to the left. The tongue cannot be bent to touch the outside of lip or the hard palate, and when the velum is drawn up it moves towards the left. The feet are not thickened, and the movements of the toes are free but weak; the left ankle can only be imperfectly abducted. The sensibility of both feet to the galvanic current is greatly diminished; the slightest touch with the points of a pair of compasses is felt, but on the left foot the patient cannot distinguish whether one or both points are applied. Feels the difference between hot and cold water, but says that a year ago he could not distinguish this with either hands or feet. The skin on numb parts is soft, thin and smooth, but the linear markings and the openings of sweat ducts are nearly or wholly effaced. There are no eruptions or sores, but the colour of the diseased skin is a shade lighter. Has lost sexual power.

2.—A male; æt. 33; married; no children; ill 5 years. He lost his father and several relative sfrom phthisis, and has a cousin in a neighbouring hamlet who is a leper. In his own hamlet he alone out of 400

people is affected. Before being seized by the present disorder he had suffered from ague and rheumatism, the latter incapacitating him for work during a whole year; since then he has been liable to breathlessness and palpitation after exertion. The present illness began with a numb patch over outer left thigh, and made no progress for 2 years; but after this he was attacked with general anasarca, and numbness of hands and feet, and the eyebrows fell out. The condition of his hands has improved, for whereas he formerly could not feel even a light weight, he now readily perceives anything in contact with the palm. Last year the numbness of his feet became aggravated, and extended nearly throughout the extremities; the hair on the summit of cranium, on the temples, in axillæ and on pubis fell out at the same time; tubercular patches appeared on face and forearms, and discolourations on thighs. Since then he has been completely impotent.

Admitted with symptoms of dropsy and albuminuria arising from mitral disease. The anasarca disappeared after a fortnight's stay in hospital, and his general condition was then as follows:—Leonine brow; eyebrows, alæ of nose and lobules of ears thickened. Mucous membrane of nose and mouth pale, with red congested patches. Sores on finger tips, and distal phalanx of left forefinger lost. The fingers are one-fourth flexed, and the thenar and hypothenar eminences have disappeared. There is intense numbness up to middle of forearms, and the flexors and extensors of the fingers contract only when the full power of the current is applied. The pronators, supinators and deltoids respond but very feebly to the mild power, while both bicipites contract readily. The tongue cannot be brought to a point or pressed firmly against the lips. The eyelids are not firmly closed, nor the upper lip readily elevated, especially on the right side. The lower extremities are emaciated, the toes semi-flexed, and the ankle joint somewhat stiff. In the thighs, the left vastus externus and hamstrings are smaller and more inactive than those on the right side. In the legs, only the inner head of the right gastrocnemius contracts under the mild power of the battery, and the other muscles respond feebly to the full power. The feet are perfectly insensible to the battery, but the patient is sensible of being touched with the points of the compasses. There is flattening over the left posterior cervical region, wasting of trapezius and latissimus, but over the upper portion of the latter the current produces severe pain. Shortly after admission there was an attack of fever, and intense shooting pains in fingers, but it subsided in three days after an enormous deposit of lithates and lithic acid, which continued for some time.

3.—A male, æt. 30; villager; married, and has three children, the youngest æt. 3; ill 14 months. Comes from a highly leprous district, but says there are no lepers among the 200 people of his hamlet. Has suffered from ague. Lives on vegetables and rice. Parents dead for 10 years; does not know family history. The present disease began with loss of power in right thumb, which was next felt in left; it thence spread to the forearms and shoulders, and has for four months incapacitated him for work, as he cannot grasp with the hands or raise his arms above a horizontal line. Has experienced numbness, especially in thumbs and forefingers, and twitchings in several muscles.

When he projects the tongue the fibres are seen to be in a state of constant vibration, and similar fibrillar movements are evident in pectorals, deltoids and over masseters. The fingers are semi-flexed, and lateral movement is gone. The right thenar eminence is extremely atrophied, and the left is also wasted, but in less degree. The long flexor of right thumb contracts but very feebly. The pronatores teretes, deltoids, trapezii and rhomboids are markedly wasted, and respond but feebly to the current. The muscles of thighs are healthy, and in legs only the left extensor of toes is comparatively wasted. The curtain of soft palate hangs down and moves only slightly during forced respiratory movements. The current is not felt in thumbs and fore-fingers, but elsewhere the sensibility to it is little diminished. Patient says his appetite is good, and that he can walk a hundred lee. In the axillæ the hair is scanty, but elsewhere it is normal; the skin looks dry and scurfy, but is free from eruptions.

4.—A male; æt. 26; a baker; married; comes from a small hill-side village containing about 1,500 people, of which number he thinks three or four are lepers. He has one child nine months old, healthy. His neighbourhood is aguish, and he has had repeated attacks of fever. There are rice fields near his house, and tanks to retain the water used in irrigating the land. Nine people share the same house with him, and, apart from feverish attacks, they are healthy. Has lived chiefly on vegetables and rice.

Eighteen months ago the face, left hand, foot and leg became swollen and painful, accompanied by general fever, which continued for nine or ten days. Hard red patches appeared on face and extremities. The swelling vanished in about a fortnight, and the eruption in about a month, each leaving behind it numbness of the parts attacked. There was great loss of power in the hand and wrist, as also twitchings and shooting pains in extremities. Sores broke out on the hips and left hand, but they healed up, and have not returned. Since the commencement of the disease he has felt unable to work. Patient is a tall, somewhat emaciated, but not an unhealthy looking man. There is no falling of hair of head or eyebrows, and there are no spots on the face. There are constant twitches about the right side of mouth and cheek, and also in left hand. No other apparent disease of any organ except the lungs, which are emphysematous; the right ventricle is also a little enlarged. No thickening of fingers or toes. Left thenar and hypothenar eminences greatly wasted, and movements of thumb imperfect; movements of fingers fairly good. The left arm is considerably smaller than the right, the pronator radii teres being specially wasted. On the right side there are twitches and shooting pains occasionally along outer surface of upper arm and ulnar half of forearm; these extend into the fingers, but more especially into the little and ring fingers. Like symptoms exist in left arm, but in more marked degree; in left hand the fore and middle fingers are completely numb to the full current of the battery; the ring finger is slightly sensitive, and the little finger still more so. In right trapezius, levator anguli scapulæ and rhomboids there are shooting pains and twitches, and these muscles are wasted. The tip of tongue is wasted; the palate drawn to right. When the lip is drawn up the right levator twitches; angle of mouth cannot be depressed to right. When the patient expands and contracts the mouth several times the muscles on the right side are exhausted, and the mouth is drawn to left. Movements of lids and forehead good. In lower extremities, the borders of both the glutei maximi are wasted; the left leg is smaller than the right, and the extensors of toes and the peronei are wasted; the right extensors are likewise very inactive. Left foot most numb, abductor pollicis and extensor brevis digitorum wasted; toes slightly flexed and incapable of being extended. There are white patches over upper and outer surfaces of both thighs, inner and posterior surfaces of left thigh and left upper fibular region, but none on body or upper extremities. The skin of the patches is altered in texture. Urine, sp. gr. 1,030. Oxalates abundant. Blood corpuscles pale, globular and not forming rouleaux so much as clinging in masses. Sexual power diminished but not lost.

5.—A male; æt. 22; a villager; unmarried. Lives near one of the Wuchang lakes, and drinks the water. About 50 families in the village, and the only other leper out of this number is a cousin of his own. Disease began 8 years ago with numbness of left middle finger, thence after an interval of 2 years it spread to right and afterwards to left foot, and was attended by ulcers over balls of toes. About the same date, though subsequent to above, the eyebrows fell out, the face and hands became numb, and perspiration ceased, red patches also appearing on the surface, which have increased within the past 10 months. He is troubled with giddiness, palpitation and breathlessness. On admission, the face was found swollen, with tubercles on cheeks, eyebrows and scattered over chin; legs slightly swollen but less so, he says, than before. Mucous membrane and alæ of nose thickened. Mitral and tricuspid murmurs, the former obstructive, the latter regurgitant. Jugulars pulsating. Pulse small and irregular. Scattered reddish, rough patches over surface. Skin smooth, soft and thin; leonine countenance, and lobules of ears thickened. Hair fallen from eyebrows, axillæ and pubis. Twitching in facial muscles. Complete numbness in hands and feet and in a minor degree in face, scapular region and neck, and in the extremities except inner surfaces. Can distend cheeks moderately, but cannot elevate upper lip, or associate the muscles so as to draw up and expand the lips alternately. Cannot wrinkle skin of nose or forehead. The rhomboid and trapezii muscles, especially on the right, are greatly wasted, also both deltoids; biceps muscles act freely, but the triceps very imperfectly. In forearms, both flexors and extensors of fingers are very weak compared with those of wrists. Both hands are soft and flabby, and the muscles of thumbs and little fingers wasted. The fingers cannot be abducted from middle line; they are not thickened, but those of left hand are partially flexed. The toes are thickened and flexed, the great and little toes also retracted; feet somewhat thickened,

and muscles wasted. Movements of ankle imperfect, especially flexion of right, and abduction of left. Muscles of legs only respond to full power of battery, and under even that those of the right leg act very imperfectly. The right thigh is smaller than left. Adductors act very freely, but extensors of knees, especially right vastus externus, are weak. Lower borders of hips wasted and not responding to current. Blood very dark and venous looking, corpuscles run into rouleaux. Urine normal. Never felt sexual desires.

6.—A male; æt. 28; field labourer; married, and has three young children, of whom two at any rate, being under 6 years old, are apparently healthy. His father's cousin, æt. 50, has been a leper for 30 years, but there are no other specimens in his hamlet, which is close to a large city. The disease began 21 years ago with the breaking out of a scaly circular patch over the left false ribs, and accompanied with dryness, itching, tingling and numbness. It thence gradually spread to mammillary line in front, border of false ribs below, spine of scapula above, and spinal column behind. Similarly increasing patches broke out over outer surface of right thigh and left deltoid at 6 years later date. The disease made no advance from then till last year, when the eyebrows and hair in axillæ fell out, and the face, the outer border of the left forearm, left side of neck and three fingers of right hand became numb. Four months ago the legs also became affected, and from that time he has been too debilitated to carry on his work. He has had frequent attacks of ague, but has otherwise enjoyed good health.

Feet and hands look normal, and are lively to current except three fingers of right hand. The muscles of the left upper extremity are smaller than the right, but the deltoid is most prominently affected. The lower border of left pectoralis major, the trapezius, rhomboids, and levator anguli scapulæ scarcely move when galvanised. Portions of right gluteus, quadriceps extensor and flexors of ankle are much less energetic to current than corresponding parts of left extremity. Fibrillar contractions are very evident in the trapezius. Both feet and legs are numb, but the right especially so. Dyspeptic. Spleen normal. Urine, sp. gr. 1,030.

7.—A male; æt. 36; boatman; single; ill 3 years; is cousin of No. 5, and resides in same village when not engaged in work. Disease began with swelling of face, red patches on skin, and fever. The latter subsided after a fortnight or so, and the former after three months, leaving behind numbness in scattered limited areas. These numb spots ceased to perspire. Ulcers broke out on feet and hips, but they have since healed. He became greatly emaciated, and all the fingers fixed, but he has regained the power of extending the right fore and middle fingers. On admission, large circular spots of herpes circinatus were found over the body. Emphysema of lungs; heart pushed into epigastrium; liver and spleen displaced. Urine, sp. gr. 1,010; no deposit. Blood watery. Femoral glands enlarged. Tongue furred. Digestion good. General emaciation. Impotent for 2 years. The following movements cannot be performed:—distension of cheeks, drawing lips together as in whistling, elevation of angles of upper lip, and frowning. The tongue is wasted, and cannot be brought against outer border of lip. Both hands are wasted and the fingers bent, but those of the left to an extreme degree; the phalanges of first and second left fingers have been lost through scalding with boiling water. Does not feel battery from lower third of forearms; the flexors and extensors vibrate feebly, pronatores radii teretes also inactive. Left deltoid and triceps, rhomboids, both trapezii, and left sterno-mastoid at clavicular origin, are wasted, and feeble to current, a portion of the pectorals and left serratus magnus being in a similar condition. Feet not thickened, toes slightly flexed, and cannot be extended or firmly bent. Movement of ankles also impaired. All the leg muscles are wasted and only act under the full power, and even with that the right extensors are very sluggish. Anterior and external portions of right thigh flatter than left, and muscles less active. Does not feel current from below the upper third of leg, but distinguishes when either foot is touched with the finger. In thighs incomplete numbness on outer and anterior surfaces; both feet completely numb.

8.—A male; æt. 21; villager; unmarried; ill 4 years. Mother, brother and sister alive and well, but has been told that his father's brother died of leprosy. The disease began in the right foot, and after a year's interval spread to the left, and to the hands; and again with a like interval the whole of the extremities became more or less affected. The eyebrows had fallen at the onset of the disease, spots had

appeared on the skin, and small ulcers on the legs and feet. He has had ague, but not for any long time. He is now troubled with giddiness, palpitations, and dropsy of lower extremities. The sight is weak, and there is night blindness.

Patient has a very dark complexion with livid lips, yellowish conjunctivæ and inside of lids extremely pale. There is mitral disease. The femoral glands are apparently enlarged, but some of this may be due to the muscular wasting rendering them more perceptible. There is no increase of the white corpuscles. The urine is loaded with lithic acid and lithates; sp. gr. 1,030. He never experienced sexual desires. He cannot perform the following movements involving the use of certain facial muscles:—closure of right eyelid, frowning, elevation of upper lip, and depression of angle of mouth. The muscles of the left thumb and little finger, and the interossei are more wasted than those of the right hand; the fingers cannot be abducted and adducted, but they are perfectly straight and flex readily; the flexors and extensors of fingers, and portions of left deltoid and trapezius act very feebly when galvanised. The thighs are extremely wasted and the muscles inactive, but the left adductor mass is smaller and duller than the right. The flexors of the ankle joints are wasted, especially those of the left leg. The sensibility of the feet to galvanism, touch and pricking is completely gone.

9.—A male; æt. 30; a boatman; married, and has two children alive—8 and 9 years old; one died at 4 years old. Parents died 7 years ago of fever; 300 or 400 people in his hamlet, and no lepers. His brother resides in a neighbouring hamlet, and has a son a leper now in hospital. Has had to labour very hard, and has lived almost entirely on vegetables and rice. Previous to present illness had suffered from ague, but not to such a degree as since then. The present attack began 6 years ago with numbness of the outer part of lower third of the right thigh. He never had skin eruptions, but 16 months after the onset of the disease his face and legs swelled, eyebrows fell, skin ceased to perspire, and hands and feet became numb. Two years thereafter the whole of the extremities and face were affected, and hair of axillæ and pubis fell out, and impotence, which had been increasing for a year or so, became absolute. The femoral and axillary glands have been enlarged for four years. On admission, the patient was in a precarious condition in consequence of general anasarca, pleuritic effusion, and pneumonia of left lung. Under diuretics and nutritious diet these symptoms disappeared within three weeks, and his condition was then as follows:—Brow leonine, ears not pendulous, nose thickened, sense of smell impaired, noises in ears, dimness of sight, giddiness. Marked arcus senilis. Anæmia extreme, eyeballs slightly yellow. Urine containing both casts and albumen, but less than previously. Little fingers and toes slighly bent and cannot be extended; lateral movements of fingers defective. Left ankle cannot be abducted. Eyelids close easily, but forehead cannot be wrinkled transversely or perpendicularly. Movements of mouth, especially on right side, impaired. The lower jaw can be jerked to the left, but cannot be retained there for a second. The muscles of the trunk and limbs are wasted as follows:—middle two-thirds of both trapezii, lower borders of pectorales majores and glutei maximi, right tensor vaginæ and left biceps flexor cruris. The left thigh, especially the quadriceps extensor mass, wasted, and inactive to current. In the legs, only left gastrocnemius contracts when the current is passed, but it is perceptible to the patient when applied over extensors, though not at all when passed through feet. The left arm is throughout smaller than the right; the triceps, pronator radii teres and long supinator are especially feeble, and dull to the current; the flexors and extensors of fingers respond well; in all the fingers the sensibility is diminished, but to the greatest degree in the ring and little fingers. Both thenar and hypothenar eminences are wasted, but not to a marked extent; fingers straight, and grasp with moderate firmness. No thickening of hands; skin on dorsal surfaces smooth and devoid of hair.

10.—A female; æt. 25; wife of a field labourer; married for 9 years; has one child 7 years and one 3 years old. Lives on the Yangtsze bank in a hut, and has annually to clear out when the river rises. Ague abounds, and she has had numerous attacks. Disease began while she was pregnant with her first child. It commenced with pain in the limbs, aggravated by touch, along with tingling and numbness; red spots broke out over body, the face became swollen, and there was great loss of strength, although the appetite continued good. The numbness has since diminished, and she can now button her clothes which she could not do for 2 years. At first the hands used to be very stiff, and there was great difficulty in opening the

fingers if they had been closed for any time. During the past 3 years ulcers have broken out on legs and hips, but have generally healed up after a few weeks. The hair of scalp, eyebrows and axillæ fell the year after the onset of the disease. On admission, the face was leonine, surface irregular from numerous hard reddish tubercles; mucous membrane of nose, and conjunctivæ thickened, lobes of ears pendulous; skin altered in texture. Fingers thickened; hands, especially left, wasted. Both deltoids, the trapezii and rhomboids very inactive. Legs wasted, and only feebly responding to full power of battery. Movements of tongue defective; she cannot contract the apex, or bend it over the under lip. Menstruation normal.

11.—Mother of above; æt. 52; ill 1 year, the disease therefore evidencing itself in her 7 years after it had attacked her daughter. States that she and her daughter are the only lepers in a hamlet of about 200 people. Does not know whether or not there is leprosy in her family. She resides in a hut near her daughter, and has suffered from ague, headache and giddiness. Has four daughters and one son alive. Disease began with pain and tingling in right hand, and a feeling of needles and pins all over the body, with shooting pains in the extremities. Three months subsequent to commencement, the hair of her eyebrows fell out, and a hard lump formed on her chin. A month ago the tongue was also attacked with a prickling feeling. She thinks that her nervous symptoms are less marked than they were 6 months ago. The movements of the tongue are very uncertain and tremulous. There are twitches in the facial muscles, and inability to roll eyeballs upwards. Right hand wasted; flexor longus pollicis and flexor communis, as also left deltoid, partially atrophied. Right fore-finger most numb, and little finger least so. Left hand but little affected. Legs much more numb than arms; the muscles only respond to the full current, and those of the left leg less actively than those of the right. Gums bleed readily. Appetite good.

12.—A male; æt. 38; a boatman; married, and has one child 7 years old. This child suffers distinctly from wasting of the right hip, and weakness of right leg. Disease began 22 years ago. States that his mother, one elder brother and two sisters are alive and healthy. He resides in a four-roomed house with 13 people, and lives on vegetables and rice. There are several hundred people in the village where he resides, but no lepers that he know of. He suffered severely from tertian ague from his sixteenth to his nineteenth year, and it was at the same date that he was first attacked with leprosy. The disease set in with pain, numbness and weakness of left thigh, but made no advance for 4 years; thereafter however the face and extremities were seized with twitchings, startings and numbness, followed in a few months by contractions of the fingers, the right hand preceding the left. The eyebrows, eyelashes, hair of axillæ and pubis partially fell out, but he never had any eruption or sores on his skin. His appetite and digestion continued good throughout. The disease has not attacked any other parts since the fifth year of the malady.

The hands, feet and forehead are completely numb; the outer portions of arms and thighs and the whole of forearms and legs are numb, but in a less degree. In these also there is still starting and shooting pain. When the skin of the feet and hands is touched he readily feels it, but here the galvanic current is only faintly perceptible. The face is emaciated, the right angle of the mouth drawn upwards and to the right, the left angle depressed to the left. The right depressors and the left elevators of the lips do not respond to the galvanic current. The occipito-frontalis, orbicularis and corrugator supercilii are wasted. Neither the skin of forehead nor that of nose can be wrinkled. The muscles attached to the scapula are well developed, and respond energetically to the current. The muscles of the arms and legs are wasted, especially the right triceps and the extensors of fingers; the thenar and hypothenar eminences have disappeared; the fingers are extremely flexed, and the flexors retracted. Both the large gluteal muscles are wasted at the lower border. Right vasti are also diminished in size, and the extensors of toes, and especially those of left, are extremely affected. None of the muscles of the foot answer to the current. The patient retains his sexual appetite and power. The femoral glands are considerably enlarged. There is no power of distinguishing hot and cold water applied alternately to the feet.

13.—A male; æt. 21; field labourer, son of a weaver; relatives healthy. One other leper in his hamlet of 400 people, which stands on a low hill and is dry. Only field labourers suffer from ague. Four years ago hard red patches appeared on his face and left arm, and the hair of his eyebrows fell out; after a short interval he noticed that the diseased skin was also numb. Two years ago his right arm, his

body and legs were similarly attacked, and many of the recent tubercles ulcerated. No hair has appeared in axillæ or on pubis, and that of the head has been destroyed by favus. His appetite and digestion have always been good.

Face and extremities roughened with tubercles and numerous sores; numbness pretty general in same regions, but is most marked in right middle and ring, and left ring fingers. The left thenar and hypothenar eminences are wasted, and the flexors of fingers and thumb weak; there is a hollow marking the line of the pronator, and the muscle feebly moves when galvanised. The right pronator is wasted, as are also the extensors of the fingers, the weakness however being less marked than on the left side. The muscles of the upper arms are likewise atrophied, the left deltoid to the most intense degree. The trapezius and large muscles of back are healthy, and fairly well nourished. Facial muscles could not be judged of, on account of the numerous tubercles interfering with the movements. In the lower extremities, both glutei maximi are wasted, only portions of the fibres contracting when the current is passed. Physical signs of deposit in upper lobe of right lung. Spleen enlarged to beyond hypochondrium, and femoral glands very prominent. Red corpuscles pale, and white abundant. Tongue loaded with fur. Urine shews a large deposit of lithic acid and lithates. Sexual power never developed.

14.—A male; æt. 28; married, and had two children, who died of small-pox. Is a field labourer, and dwells in an aguish district in a small hamlet containing 100 people, and he is the only leper in the place. Parents are dead; does not know family history. His disease began 7 years ago during winter while he lived on the hills and fields, having been driven from his house by a robber band. He says that several persons in the neighbouring hamlets were attacked at the same time, and ascribed it to their privations. Commenced with numbness of right little finger, and a spot of vitiligo over wrist, which grew to the size of a crown piece; it did not progress beyond this for 3 years, after which time however the numbness attacked his hands, feet, face and nearly the whole of the extremities, and at the same time the hair of eyebrows, axillæ and head fell out. Since this occurred ulcers and œdema have usually been more or less present in lower extremities. Has suffered both from ague and rheumatism. Sexual power unimpaired.

The appearance of the patient's face is that of a man of fifty; the skin is somewhat puffy, and covered with numerous tubercles the size of small peas; complexion bronzed; cuticle glistening and marked out into smooth areas. Lobules of ears and alæ of nose thickened. Has palpitations and giddiness, and there is a double murmur at the base of the heart. Right thenar and hypothenar eminences and interossei wasted. In both forearms, muscles act readily to current, except the pronators, which are weak. The right trapezius and rhomboids are flatter than those on left side, and contract much less powerfully to the current. The left pectoral again is less active than the right. The muscles of the legs do not respond to a mild current, and even with full power their action is by no means vigorous. Over the left vastus externus the contractions are weaker than on the right side. Fibrillar movements are observable in the right deltoid.

The foregoing fourteen examples, given at some length, are selected from the specimens of anæsthetic leprosy which came under observation at the London Mission Dispensary during the past year. There were in all 57 cases, and of these, 55 were males and 2 females. Out of the number 20 marked specimens were chosen, and kept in hospital for periods varying from one to two months. On comparing the collective series of statements of the 57 applicants, it was found that only 2 of them had been born and bred in cities, that 8 others had lived in towns shortly previous and subsequent to the onset of the malady, while the large remaining majority dwelt in hamlets containing a population of from one to eight hundred people, and generally situated in low lying malarious districts. Seeing that the disease chiefly afflicted residents in the country, field labourers were the predominating class; of the others, 9 had been boatmen, 2 were teachers, and 19 had been pedlars or had pursued some style of handicraft. With scarcely an exception, poverty and hardship had been the general lot, often for months rendered extreme through destruction of crops by robber bands, inundations, or more ordinary causes. Even in their better days, the usual diet for adults was one very defective in nitrogenous aliment. It generally consisted of a pound and a half of green or preserved vegetables prepared with a little oil, and a somewhat less quantity

of inferior rice daily. Fish was only occasionally partaken of, and even then it was in such limited amount that it added little to the nutritive value of the dietary. Pork and beef were articles tasted once or twice a year. With this quality and quantity of food to restore the textural waste, considerable and prolonged exertions had often to be undergone, until at length the vigour of the body had yielded to the progress of the disease. Both the winter clothing and the houses were on a par with the diet, the former made of cotton cloth and affording a thin insufficient protection, especially to the lower extremities; the latter a congeries of filthy mud cabins with accumulations of excrement in close proximity. It is from people living under such conditions that leprosy selects its victims, and its prevalence in a district is in a direct ratio to the wretchedness of the inhabitants. In quarters where poverty is less intense there is not more than one leper in every three or four hamlets; but where the general condition is one of extreme indigence, each village has one or more of its members tainted with the disease. In the places where the disorder is most abundant, the residents have frequently noticed that it has for generations declared itself in certain families in preference to others, and further that both the living and past lepers, not only of the same but of the neighbouring villages, are often connected by close ties of consanguinity. An attempt was therefore made to classify the cases into those which might be hereditary and those of spontaneous origin; but it had to be given up, as it failed in a good many instances on account of relatives having been scattered, and living in ignorance of the ailments of the two preceding generations. There were however several individuals from districts where the disease had previously been unknown, and of whom the immediate ancestors, although stated to have been healthy, had migrated from tainted regions. Before fixing on the sporadic cases as entirely due to endemic causes, the mother's lineage would also have to be ascertained, inasmuch as women, although comparatively exempt from the external manifestations of the disease, may yet retain the power of bequeathing a "weakness and vulnerability of constitution" to their male offspring, analogous to what has been traced out in the transmission of progressive muscular atrophy. Fortunately for mankind the multiplication of lepers in the direct line of descent is commonly limited to the mildest cases and earliest stages of the disease, for in those in whom there are well marked morbid symptoms exhibited before puberty, the generative organs often remain undeveloped, as seen in cases 5, 8 and 13. Further, when the disease is established in later life the sexual functions are weakened and for the most part soon destroyed, as seen in cases 1, 2, and 9. The sons of a leper father being thus usually born while the disease is latent, may have the good fortune to escape the taint, or they may have the predisposition to it in such a mild degree that if placed in luckier circumstances they may partially or completely combat it. No specimens of a husband and wife both leprous were met with, and only five children having one leprous parent could be got hold of. One of these had been begotten during the father's illness, and looked a healthy enough little boy, but his mother stated that when running about he often complained of a weakness in the right thigh, and on examining the limb, the hip was seen to be wasted, and that too without indications of joint disease. The others were all under the age when leprosy stamps its most characteristic marks on the person. The weakening of the reproductive powers assists in explaining the limited and stationary number of the population affected, although living in the midst of hygienic circumstances favourable to the development of constitutional disease. But not only does leprosy contrast with other transmissible disorders, in its species being self-limiting through feeble generative power, but social custom decries the marriages of those who may still retain that function, and sanctions the separation of the wife when an outbreak takes place at a later date, thus materially assisting the natural tendency of the disease.*

Those instances where the disease is not hereditary, and has broken out in persons in tolerable circumstances, cannot be referred to contagion. There is plenty of proof that a leper is as little likely as a tubercular subject to infect the other inmates of his house, as attested in all the previous histories. At present I am not aware of experiments to prove whether or not leprosic deposit may be inoculable in the same manner as tubercle; but in every village in this neighbourhood where the former is found, its non-contagiousness is striking, even although, from the dirty habits of the people, the discharges from the sores on the hands and limbs must often come into contact with the skin of healthy persons.

* Compare with Drs. MULLER and MANSON's account of popular sentiment in Amoy: *ante*, p. 14.

As to its etiology, it is evidently not dependent on the same circumstances of soil and vegetation as paludal diseases, for many parts of the world where these are endemic are free from leprosy, while the diathesis is all-powerful in other regions which are non-malarious. In the swamps of the Southern States, among the well-fed and well-housed negroes, it has been hitherto unknown, but it yet remains to be seen whether it shall be engendered in these places in their descendants, should the blessings of freedom permit them to fall into poverty and low hygienic conditions. In Iceland the fish on which the people chiefly feed, and the deprivation of fresh vegetables, have been assigned as the *fons et origo mali*, and Dr. HJALTALIN assured Dr. Lauder LINDSAY "that in localities where the inhabitants live largely on fat fish, such as cod or lake trout, leprosy is more prevalent than elsewhere." But in this part of China such a mode of induction might be reversed, as the lepers are nearly all too poor to afford fish, and live almost entirely on fresh or salted vegetables. Seeing that it is a degeneration which flourishes amidst a variety of climates, of soils, of staple articles of food, and of race, it cannot be attributed to any specific defect in one of these; yet it is never found to take vigorous root in a population without the aid of an unfavourable conjunction of several of them. A climate which lowers vitality through excessive heat, cold and humidity, an undrained or malarious soil, paludal anæmia and unhealthy habits, are the anti-hygienic influences which in the surrounding country districts foster the disease by establishing a physical degeneracy of the race, and a susceptibility to morbid alterations of structure.

But were there in addition to these, a special, active material cause in the exhalations of the soil, either in an organised form like the so-called "malaria spores" or other microphytes, or as a combination of a purely chemical nature, there ought for the proof of such a theory to be, in certain definite months and years more favourable to the multiplication of such special causes, a corresponding greater proportion of the inhabitants affected. Moreover strangers should even in ordinary years be more susceptible to the poison than the indigenous inhabitants and old residents, who would in time become so far exempt through acclimatisation; and the members of leper families who in their youth had removed to towns should enjoy a greater freedom than those who remained in the country, seeing that the evident results of infecting telluric poisons are not hereditary, but disappear with the organisms primarily attacked. Against such a hypothesis being true, there are to be considered the sporadic nature of the disease in the past as well as in the present time, the rarity of instances where new comers have been attacked shortly after settling in a leper district, and cases like to three which are now under observation where the disease appeared 10, 12 and 19 years after the subjects had settled in Hankow, while their brothers and sisters who had remained in the country escaped.

Neither is its behaviour altogether like that of an animal virus, as which it has apparently been considered by certain writers (Erasmus WILSON, *Diseases of the Skin*, 6th Ed. pp. 594, 604, 649, 662), for, unlike the syphilitic poison, there is here no evidence of a power of self-augmentation in the system or of a power of perpetuating itself by transference to the healthy. Neither do its symptoms, like those of hereditary syphilis, disappear in the succeeding generation, but they cling to particular families over long periods, remaining latent or displaying themselves according to the intensity of predisposition or of exciting causes. In these last mentioned characteristics leprosy resembles a diathesis like the scrofulous, which may remain latent, or may be brought into activity by a variety of depressing circumstances, as attested by the fertility with which it is developed in overcrowded school rooms, workhouses, &c., or the manner in which phthisis increases and decreases according to the drainage of the soil, or stands related to an inferior vegetable dietary like that of the German peasantry (NIEMEYER).

How far, apart from hereditary tendency, the existence of another cachexia in the parent, or marriages of consanguinity, predispose the offspring, and whether the diathesis is often acquired without some such injurious influence, were not satisfactorily shown in a sufficient number of cases to be of any value. So far as my enquiries went, leprosy or scrofula, or both, existed in the ancestry of the majority, and it was frequently discovered that those who denied a knowledge of the leper taint were simply deceiving me, as their near relatives came subsequently under treatment for the same disease.

But the diathesis which of all others anæsthetic leprosy most closely resembles is that which has been described by TROUSSEAU as leading to progressive muscular atrophy. Both agree in showing a singular

exemption of the female sex, which as regards *leprosy is illustrated in the foregoing cases*, where only 2 out of a total of 57 were females; both are hereditary, or may be developed under the same circumstances of exposure to mal-nutrition; both show an early tendency to severe implication of the thenar and hypothenar eminences and interossei; and in both the progress of the disease *to a fatal termination is often* slow, *leprosy* lasting, as in cases 6 and 12, for twenty-one and twenty-two years. At the commencement too of CRUVEILHIER'S disease, it is confined to a limited region for a year or more, and so is leprosy, which the history of nearly every case proves to be similarly defined for from one to six years. Whether or not leprosy may set in *with muscular wasting* and a diminution of electro-muscular sensibility I have not yet been able to prove, but I have seen two instances, one the son of a leper mother, and the other the brother of a leper, in whom the anæsthesia of the skin was much less marked than the muscular atrophy. One of these patients came seeking advice *on account of the weakness of his right* shoulder and leg, and in him portions of the deltoid, trapezius and vastus externus were atrophied. The other came for medicine for his mother, but said that he himself had weakness of the left ankle, and on examination the flexors were comparatively inactive to galvanism, and smaller than their *fellows of the opposite side. It yet remains* to be seen whether in these cases the other symptoms of leprosy will be gradually evolved. In both diseases there is a diminution of electro-muscular sensibiliy; fibrillary contractions and twitchings are visible, and cramps may or may not be troublesome, but intense continuous pain is never felt, and *the involuntary muscular structures and organs of the senses* display no symptoms of organic change. A distinction can scarcely be drawn between them from the post mortem appearances, for the condition of the cord and nerves is described as healthy or as presenting different lesions by the various investigators of leprosy. So it is with progressive muscular atrophy, *for Lockhart* CLARKE discovered areas of fluid and granular degeneration in the grey and white substances of the cord, while DR. ROBERTS in nine out of thirteen examinations noted the spinal cord as healthy; and TROUSSEAU and NIEMEYER viewed these nerve softenings and atrophies as chiefly the secondary results of a primary muscular affection.

The distinction between the external expressions of the two diatheses as described by TROUSSEAU in his *Clinique Médicale* (3me Ed. t. ii. p. 636) is based upon one severe example of leprosy recorded by M. PETER while acting as CRUVEILHIER'S assistant. The particulars of the case are not given, further than an account of the state of the hands, which were red, thickened, completely anæsthetic, and like claws; the wasting was limited to the hands, and the flexor tendons were retracted. Now among the cases seen here this severe implication of the hands was the exception; atrophy of their muscles, and more or less flexion of the fingers were frequent enough, but the other changes were more rarely met with. The circumscription of the disease to the hands was not common; the atrophy might extend to the muscles of the jaw and tongue as in case 1, or it might spread, as in the others, to those of the extremities, and be shown by diminution in their size, and weakening of their electro-muscular sensibility. The characteristic features of advanced leprosy would at once form a distinction were it always present; but examples are sometimes met with, and that too not of recent origin, where the only symptoms are numbness, fibrillar movements and muscular atrophy, and where the skin of the face is apparently unaltered, and the eyebrows intact. It is granted that in the majority there are structural changes in the skin, either in patches on the face or in the continuity of a limb, that sweat glands, hair follicles and pigment disappear, that the epidermic cells are readily shed and the cuticle left perfectly smooth and glistening. *But it is contended that leprous atrophy* is in some cases as marked in the muscles as in the skin, or even more marked, and that if we are justified in looking on the morphea as relics of the leprous diathesis, we are equally warranted in regarding a disease the leading characteristics of which are so nearly allied, as another heirloom of leprosy, only differing in intensity because the latter occurs among populations where the "normal development and conservatism of the organism" have been lowered.

As this paper has already become rather long, the results of treatment will be reserved for a future communication; but it may be stated that no specific method was attempted. All were supplied with good animal diet; while cod-liver oil, simple baths, wet sheet packing and subsequent frictions of the skin with horse hair gloves were employed. Galvanism was systematically applied to the anæsthetic skin and muscles; and iron or arsenic administered as tonics. In a few, small doses of the bichloride of mercury or the iodide,

or iodide of potassium up to one drachm daily, were given instead of the arsenic or iron, but without any marked improvement following. Counter-irritation by means of the actual cautery was also used over the lower cervical and upper dorsal vertebræ, but it was given up, as the cases under the use of nutrients, tonics and galvanism improved as rapidly without its application. So far as I have seen, the symptoms of the disease when seen early are tractable enough in numerous instances; that is to say, anæsthesia disappears, the muscular condition improves, ulcers heal up and skin eruptions vanish. Subcutaneous injections of strychnia were used but were not continued sufficiently long to show their usefulness. Iodine locally to the ulcers was found to be an excellent application. Those in case 13 healed up with wonderful rapidity under its use. In this patient the numerous tumours entirely disappeared in six weeks, leaving only the anæsthesia and the atrophy to be contended with.

Finally, the temperature of the hands is sometimes diminished as low as 75°, and rises under treatment. In other instances it remains about normal. The temperature in the axillæ is generally normal or only a degree or two below the standard.

NOTE.—As tending to illustrate the important comparison which Dr. REID has drawn between the symptoms of leprosy and those of progressive muscular atrophy, I reproduce here the notes of a case recently (21st August, 1871) treated in the Hôpital de la Pitié:—

BELLINGHEN, Auguste-Joseph, marchand ambulant, âgé de 53 ans. Son père, d'une santé robuste, est mort par suite d'un accident; sa mère est morte du choléra. Quant à lui, il a eu à l'âge de 7 ans, la danse de Saint-Guy; il fut traité pendant six semaines à l'hôpital des Enfants malades; il en sortit guéri, et depuis ce moment jusque il y a une douzaine d'années, il a toujours joui d'une bonne santé. Atteint d'atrophie musculaire progressive il fait remonter le début de son affection à une douzaine d'années. Il était alors corroyeur, et il nous dit qu'il était toujours appuyé sur la main gauche, et qu'il fatiguait beaucoup. *Pendant plusieurs années, il n'avait que de la faiblesse, et quelques contractions musculaires involontaires*: son bras conservait son volume habituel. Au bout de quelques années, il commença à maigrir considérablement, et c'est alors qu'il s'aperçut que la faiblesse gagnait son bras droit. Les mêmes contractions qui le tourmentaient dans le bras gauche s'emparèrent du bras droit, qui s'atrophia à son tour, et bientôt l'atrophie gagna les muscles thoraciques et dorsaux.

Les lésions occupent surtout les membres supérieurs ainsi que le tronc; elles sont d'ailleurs beaucoup plus marquées du côté gauche que du côté droit. Les membres inférieurs, qui commencent à s'affaiblir, n'ont pas encore subi d'atrophie appréciable. Malgré la volonté du malade, *il se produisait des contractions fibrillaires très-fréquentes*, se multipliant à ce point que les muscles tout entiers étaient agités de petits mouvements convulsifs.

Voici l'état actuel du malade—

Main gauche.—L'abducteur du pouce est atrophié; la saillie naturelle est remplacée par une dépression, et le premier métacarpien est rapproché du second. Tous les muscles de l'éminence thénar sont atrophiés, et le premier métacarpien est presque sur le même plan que le second; il en est de même de l'éminence hypothénar, qui a à peu près complétement disparu. Les interosseux sont considérablement diminués de volume, et des dépressions profondes existent entre les métacarpiens.

Avant bras gauche.—Les muscles de la partie antérieure et de la partie postérieure sont très-atrophiés; les fléchisseurs et les extenseurs des doigts sont très-peu apparents; l'avant-bras est comme desséché; le cubitus et le radius forment une saillie évidente, et l'avant-bras, au lieu d'offrir un aspect plus ou moins bombé, présente plutôt des dépressions au niveau de l'espace interosseux.

Bras gauche.—L'atrophie porte aussi sur tous les muscles du bras gauche; l'humerus n'est plus enveloppé que par une masse peu résistante.

Épaule et thorax du côté gauche.—La déformation commence à être moins évidente; cependant le deltoïde, les pectoraux sont diminués de volume, et les saillies osseuses de l'épaule peuvent se sentir très-facilement. L'atrophie est beaucoup moins marquée sur les autres muscles, grand dentelé, trapèze, sacro-spinal.

Main droite.—Les muscles de l'éminence thénar sont complétement atrophiés; le doigt indicateur est fléchi vers la paume de la main, on ne peut le redresser que difficilement; les autres doigts sont aussi fléchis, mais la flexion est moins prononcée. Cette déformation tient à l'atrophie des muscles extenseurs. Les interosseux ont également diminué considérablement de volume.

Avant-bras droit.—La déformation est beaucoup moins prononcée que du côté gauche; les fléchisseurs existent encore, et le malade peut les faire contracter.

Bras droit.—Le bras a seulement diminué un peu de volume, mais il a conservé sa forme et ses contours habituels; il est seulement un peu plus flasque qu'à l'état normal.

Épaule et thorax du côté droit.—Il existe du côté droit les mêmes lésions que du côté gauche, mais elles sont beaucoup moins prononcées. (Condensed from *Rev. Phot. des Hôp. de Paris*, 3me Année, p. 170.)

It is well known that three theories have been advanced to explain the phenomena of progressive muscular atrophy. DUCHENNE saw in them the results of disease of the muscles pure and simple, which, according to VIRCHOW, advances gradually until the nervous centres become implicated; CRUVEILHIER attributed them to lesions of the cord and spinal nerves, while TROUSSEAU referred their origin to the sympathetic system. The latest investigators on the continent—MM. HAYEM, CHARCOT and JOFFROY—are disposed to return to CRUVEILHIER'S theory, and conclude from the records of post-mortems that where lesions of the cord are discovered, the nervous elements of the anterior cornua are always found affected, while on several occasions the integrity of the cells of the posterior cornua has been expressly noted. Whatever the initial lesion may be, the immediate antecedent of the final phenomena is not a rapidly destructive myelitis, but a chronic diffused irritation which disorganises the nervous elements and sooner or later produces complete atrophy. Should it ever be possible to obtain a post-mortem upon a Chinese leper, or even such a partial post-mortem as might enable a surgeon to secure a portion of the spinal cord, the facts and theories enumerated in the text and in this note will, it is to be hoped, suggest a careful microscopical examination of the grey matter of the cord, and especially of the grey commissure and anterior cornua. R. A. J.

Dr. George Shearer's Report on cases treated in private practice, and in the Kiukiang Dispensary for Chinese, during the year 1871.

During a period of somewhat over a twelvemonth 2,456 native cases have been seen, of which chiefly the following is a condensed report. The foreign community has kindly assisted me to bear some portion of the expense incurred, and a small proportion has been obtained from the natives.

With *Skin Diseases* 288 patients presented themselves, of whom 128 suffered from scabies. Among the more noteworthy cases there was one of fibrinous erysipelas with immense swelling of left side of face, and closure of the jaws, terminating at length in an abscess in front of the left ear; one of eczema of the legs with enormously enlarged lymphatic glands in the groin, and one of a red numb patch on the forehead with fine chaffy scales, now in process of cure by arsenic.

Diseases of the Digestive System.—There were 33 cases of disease of the teeth or gums, but it is to be remarked that decay of the teeth is a much more uncommon occurrence amongst Chinese than it is amongst Europeans. The simple nature of their dietary probably wholly accounts for this. The decay, when it occurs, is peculiar and usually very slow. It is not uncommon to find a tooth with a large central decayed cavity yet with but the smallest external opening, sometimes a mere crack as it were splitting the tooth down vertically. In one case a very small hole, too small to admit a pin's head, led down to large cavities in the first and second molars. Numerous cases of disease of the digestive organs were treated. As regards dysenteric diarrhœa and dysentery the disease was usually of a mild, asthenic type, but occasionally accompanied by febrile action. In some the attacks were recurrent; in some accompanied by remarkable debility. Generally speaking however there was much less prostration under attacks of dysentery amongst the natives than there usually is amongst Europeans. Two of the cases were opium smokers who had recently given up the practice, and one or two were chronic cases with irritative fever and anæmia. The treatment varied of course to some extent, but in all, the specific virtue of ipecacuanha, simply or in combination, as a remedial agent of the first importance was fully proved. I have elsewhere shown the probability of both ague and dysentery arising from malaria, the product of moisture and organic decomposition in soils; how the two diseases sometimes seize different members of the same family though exposed to one and the same conditions, and how they sometimes alternate and at other times prevail together in the same individual. As the two diseases therefore appear to own a common cause, it may not be so remarkable that the remedial agents—specifics in fact—should be obtained from the same natural family of plants. In one young man ague of a fortnight's duration was followed by a sharp attack of dysentery which lasted for a month. Motions seven times a day containing blood and slime, with abdominal pain, tenesmus and fever.

Before passing from the diseases of the digestive system I would draw attention to the following group of cases:—

1.—Enlargement of the left lobe of the liver. The tumour measures 6 to 8 inches across, has grown to its present size within a period of 2 months, and is therefore probably malignant. Patient complains of breathlessness on the least exertion; bowels constipated; body emaciated; urine alkaline when passed, effervescing with nitric acid and then throwing down a reddish precipitate of lithates. At the end of a month there was no improvement; appetite worse; sleep impossible. Opium appeared to sustain his strength as well as to procure sleep.

2.—Sphacelus of large portions of the mucous membrane of the great intestine, with extensive hemorrhage, originating in a congested state of the viscera and portal circulation in a man of sedentary habits. The purgative treatment, so successful in cases of melæna, did not suffice to arrest the hemorrhage, which recurred at intervals for a fortnight, and astringent injections were worse than useless. Absolute rest in the recumbent posture, total abstinence from food for 24 hours, with lead and opium internally, sufficed to arrest the bleeding within 12 hours. For some time he complained of vertigo, even after the full volume and quality of the blood had been restored.

3.—Enlargement of the liver, which is felt as a bulging tumour in the epigastrium, and of the spleen, which abuts on the enlarged left lobe of the liver, in a stunted youth 15 years of age. The tumours had been growing for 2 or 3 years. Some years ago he had a dysenteric attack but never ague. This is probably an example of the slow, morbid increment of these organs from subtle miasmatic influence.

Notwithstanding the fineness of the climate, *Diseases of the Respiratory Organs*, and even pulmonary consumption, are by no means unknown. Of the latter in its different stages 33 cases were under treatment, and 4 died within a month—one in consequence of profuse pulmonary hemorrhage. Poor living and damp houses have undoubtedly much to do with it. The subsoil of the houses is generally sloppy or damp, always undrained and seldom boarded over with any proper flooring, so that there is a constant ascent of damp vapours and unwholesome exhalations, while the dietary, consisting mostly of rice and vegetables with a little fish or bean-curd—seldom flesh meat—is little fitted to maintain the bodily vigour, especially where persons have to work hard and labour within doors as tailors, watchmakers, braziers, &c. One man, aged 48, had been consumptive for 30 years, spitting blood in large quantities once every two or three years, and suffering much from dyspnœa and expectoration. His son died of consumption at the age of 20, but he manages to prolong existence and perform his daily amount of work.

Diseases of the Nervous System.—44 cases. Among these were 2 of hemorrhagic apoplexy, fatal within six hours, 1 of delirium tremens, 1 of numbness and partial paralysis of right arm and hand, with acute wasting of the muscles, 3 of convulsions in young children, and 1 of acute mania, in which the calmative effect of bromide of potassium was happily illustrated. The youth, a table boy in one of the hongs, is now perfectly well.

The number of *Opium Smokers* who applied for advice was 197. Of these—

27 used half a mace (or about half a drachm) daily,
54 used one mace,
38 a mace and a half,
41 two mace, (one man smoking the drug for a period of 20, another for a period of 30 years),
13 used 3 mace,
8 used 4 mace, (one, a subject of asthma and bronchitis for a period of 10 years),
7 used 5 mace, (one of the number having smoked opium for a period of 17 years at a cost of $ 80 per annum),
4 used 6 mace, (one of them a Buddhist priest using this quantity for 17 years).

The whole of these were supplied with medicine at the Dispensary, and more than a tenth part returned to report themselves cured of the craving and habit. It is possible that a much greater number were really cured, but on the other hand it is highly probable that many relapsed into their old habit when the state of their finances improved. Poverty, and consequent inability to purchase the drug, was the general excuse pleaded for coming to see me. Some reduced the quantity used from 3 or 4 mace to 1 and there stopped. A great deal of physical distress is endured by many on laying aside the pipe. Diarrhœa and bloody flux, abdominal pain, gnawing and uneasiness, wrenching pains in the joints and limbs, insomnia and anorexia are some of the symptoms complained of. I entertain great hopes that the exhibition of the hydrate of chloral as a palliative, and an effective substitute for the stimulus withdrawn, may prove an easy means of weaning many from the habit. Within equal periods I have seen nearly three times as many opium smokers in Kiukiang as in Hankow. My impression is very strong that the habit of opium smoking is much more prevalent here than it is in Hankow, fully a tenth part of the inhabitants indulging in the practice as ascertained by the careful inquiries of the Commissioner of Customs, a circumstance for which the commercial stagnation and comparative inertia of the port may possibly to a large extent account. I am inclined to believe that the development of new industries, and generally speaking of trade and commerce throughout the country, will do much to banish this enslaving custom.

The following is a remarkable case of *Opium Poisoning*, in which personal idiosyncrasy or insensibility to the action of the drug was manifested to a high degree.

On April 10th I was called into the city to see a young man, aged 24, who having quarrelled with his elder brother about some family matters, swallowed at 8 P.M. the previous night 4 mace, or about half an ounce avoirdupois, of crude opium, with a view to suicide. I saw him some 12 hours after he had taken the drug, and was amazed to find him awake and able to sit up in bed, speak, and swallow some hot water and mustard which had been prepared for him. There was no undue contraction of the pupils. He recovered without emesis or any means whatever having been employed to remove or nullify the effects of the poison. He suffered during the two following days from depression of spirits, pain in the region of the stomach, thirst, headache, a sort of spasm or stricture in the œsophagus, anorexia, with livid lips, dry, leathery, brown tongue, a full pulse of 120, and profuse perspiration. On the third day he was still prostrate, feverish and perspiring; bronchial catarrh had set in, with mucous râles everywhere audible throughout the chest, from which he had been perfectly free before taking the opium. This, I apprehend, was due to the temporary stasis of the pulmonary circulation during the brief stage of sopor. He ultimately made a good recovery. There can be little doubt as to the quantity of opium taken. He bought 4 mace of the crude drug. A similar mass was weighed out and shewn him so as to verify the actual amount swallowed. He cut the lump into small pieces, rubbed it down in a basin with some cold water, and drank it off at a gulp; so that he swallowed all but some dregs and fragments which clung to the sides of the vessel. The man is not, and has never been an opium smoker. I question whether the records of medical jurisprudence can produce another such case where recovery took place after the exhibition of so large a quantity of this potent drug in a person not accustomed to its use.* There is no way of accounting for it except on the supposition of personal idiosyncrasy or constitutional insensibility to the action of opium.

Of *Eye Disease* 457 cases presented themselves, amongst whom may be noted 5 of panophthalmitis, 17 of staphyloma, 1 of staphyloma with prolapsus iridis, 2 of staphyloma with escape of lens, 4 of perforating ulcer of cornea with hernia iridis, 56 of single pterygium in one eye, 16 of single pterygium in both eyes, 11 of double pterygium in one eye, and 1 of vascular nævi of both corneæ with pterygium of 2 years standing (cured by peritomy and application of nitrate of mercury ointment).

The following is an example of the hopeless cases which come for aid. Lower eyelids converted into the aspect of pieces of raw, red mucous membrane, from neglected eczema and inflammation persisting during a period of 10 years. The puncta are destroyed, and the tears necessarily flow over the cheeks. Lower lids united to the eyeballs by a fleshy structure. As a very extensive operation would be necessary to set them free, an operation withal eminently unsatisfactory, nothing was done. 10 cases of soft cataract were treated, useful vision being obtained in the majority after operation; 2 cases of hard cataract were couched, tolerably good sight being obtained immediately after; 1 case of double soft cataract presented a calcareous scale imbedded in the anterior capsule of the lens, which was first removed with the needle. There was 1 case of simple capsular cataract, and 4 cases of destruction of sight, with opaque cornea, the result of inflammatory action following in the wake of dysentery. The perpetual irritation of inverted lashes gives rise to a peculiar but easily curable condition of the cornea, which becomes vasculo-nebulous and sodden. The solvent action of solution of sulphate of soda upon opacities of the cornea in general may be held to be proved.

One case of staphyloma was so large that it was necessary to remove a double convex portion of the cornea, the flap healing kindly and contracting upon the diminished eyeball.

One case of intense ophthalmia with hypopion and chemosis began to improve as soon as the gums were touched with mercury, and the pus was within ten days wholly absorbed. I have found that in

* TAYLOR (Guy's Hospital Reports, October 1850, p. 220) relates a case in which five ounces of tincture of opium were taken without producing sleep, and the patient recovered. The corresponding quantity of opium would have been 3 drachms. Although the actual weight of drug was one-fourth less than in Dr. SHEARER'S case, the presumably better quality of the opium (Turkey) and the fact that its active principles were dissolved in alcohol render the two instances fairly comparable. GUY (*Forensic Medicine*, 2nd Ed. p. 446) says, without however giving any particulars, "in one instance recovery took place after no less than eight ounces of solid opium." CHRISTISON (*Poisons*, p. 706) likewise mentions this important case, but contents himself with stating that the patient was a female, and that particulars are to be found in the *American Medical Recorder*, v. xiii. p. 418, and in the *Gemeinsame Deutsche Zeitschrift für Geburtshulfe* for 1826, neither of which is within my reach. R.A.J.

cases of glaucoma an operation on the eye with a view to the dissolution of the lens is worse than useless. It gives rise to intense neuralgia of the eyeball, is apt to light up inflammatory action in the weakened organ, and never improves the sight. A large number of pterygia are formed by processes of the conjunctiva put forth to cover ulcers in the cornea, the nearer the ulcer is to the margin of the cornea the more certain being the formation of the pterygium. It exactly resembles a curtain or web of transparent tissue, gathered up into a knot at one point (immediately over the ulcer) and radiating towards the circumference. The cornea, though highly organized, having little power of self-reparation, nature provides for its repair in the above manner by an extension of the conjunctiva proper. It is unfortunate that in cases otherwise suitable for the formation of artificial pupil the lens is found in a softened, semi-dissolved state, and sometimes partially escapes during the operation. In staphyloma I believe the rule is invariably to find the lens in a softened, half-dissolved state, so that its removal is no loss.

Amongst other cases of interest were one in which the tarsal cartilage of the left eye was converted into the texture of bone, occasioning permanent inversion of the upper lid, and all but complete closure of the eye, the conjunctiva being granular and velvety; one of dimness of vision followed by sclerotitis and iritis in a person the subject of chronic aguish fever, the arrest of the inflammation in this case being exactly coincident with the first slight touching of the gums with mercury; and one of intense general ophthalmitis, threatening bursting of the eyeballs, but arrested by similar treatment, and the eyes saved.

Intermittent Fever and its Sequelæ.—Tertian ague, 97 cases; ague in infants under 3 months old, 3. In one case there were many separate attacks yet without interfering with lactation. Tertian ague passing into the continuous or remittent type, 7. Two of these were opium smokers, and their cases appear to be quite exceptional, as the use of the drug, amongst many evils, seems to secure one benefit, namely immunity from intermittent fever. Several examples occurred in persons who had recently broken off the habit, but in this there is nothing surprising. Irregular ague, 10; with intermittent attacks of diarrhœa, 5; quartan ague, 17. This form of the disease had lasted in several cases for periods of 2 or 3 years. Quotidian ague, 40. In all but one case the attack commenced in the evening, not in the morning as stated in most of the text books to be the habit of the disorder; nightly chills for periods of 2, 3 and even 5 months being the common order. In one case the attacks were one day light, the next day heavy (tertiana duplex); in one the disease was complicated with enlarged spleen, in another with bronchitis; in 3 the attacks anticipated, threatening to pass into remittent fever; in 3 the attacks were repeated twice or thrice a day (quotidiana duplicata et triplicata) and passed at length into a severe type of remittent fever, with continuous febrile action and slight remissions, but without distinguishable chills.

One of the severest cases I have seen was contracted on the banks of the Poyang Lake, during the hot weather of early autumn. It commenced as a quartan following a rather debilitating attack of choleraic diarrhœa experienced 2 months before, and passed within a few days into the worst form of remittent fever. An ipecacuanha emetic followed by the largest doses of quinine—50 to 60 grains daily—formed the principal element in the treatment. The crisis arrived on the 7th day, but the safety of the patient was momentarily imperilled by the unwitting substitution of cinchonine (sold as genuine quinine under the seal of PELLETIER & CAVENTON), an anti-periodic of vastly inferior power. The rigors returned on the day that the quinine was intermitted, but were effectually kept in check by a return to the use of HOWARDS's disulphate.

Among the sequelæ of intermittent fever were 20 cases of anæmia, 8 of fever with anasarca, and 15 of chlorosis with mitral bruit, palpitation, pains in the limbs, debility, sallowness and emaciation. In the majority of these the history of ague could not be made out, nor was there any palpable enlargement or tenderness of the liver and spleen, yet there could be no doubt that the conditions were induced by like malarious influences from long residence in aguish districts. It is quite possible the patients may have suffered from a mild form of fever from time to time without taking much notice of it. The usual ferruginous preparations with liberal dietary sufficed in most cases to effect a rapid cure. In one case of two years' standing the mere substitution of animal food and bread for the insipid vegetable diet of the natives, together with change of residence, sufficed to produce a wonderful improvement. The treatment approved by the native faculty for this class of cases—which is however quite beyond the means of the majority—

is the wearing of a solid ring of silver round the neck. There were several cases of tertian ague and dysentery affecting the same patient, the prostration of strength and emaciation being very great. In these cases a combination of equal parts of quinine, bismuth, saccharated carbonate of iron and Dover's powder was most useful. There were 10 cases of enlarged spleen with ascites; enlarged spleen with anæmia, 10; enlarged spleen, dwarfing the physical development, 5; ascites with extreme emaciation, but no perceptible enlargement of liver and spleen, 3. In these cases doubtless the congestive and hypertrophic stages had long since passed, and that of atrophy and shrinking had set in. After the operation of tapping, which was frequently performed for relief from the dropsical accumulation, the fluid continued in some cases to flow for a period of 2 or 3 days with no ill result. Considerable and rapid reduction in the size of the spleen and liver was observed to follow the internal use of pernitrate and tincture of the muriate of iron, especially when supplemented by the inunction of ointment of biniodide of mercury. I can hardly say that the bromide of potassium has yet had a fair trial, though it is highly spoken of both as an anti-periodic and means of reducing splenic enlargements. In one case of ascites a quantity of air entered after the fluid was withdrawn, and part was forced out through the tube with a rushing noise, but no ill result followed, and it ultimately disappeared. Ascites following dysentery, 2. An ague cake 8 inches vertical, 12 inches across the middle, of 7 or 8 years' growth, was discovered in a man coming from a swampy neighbourhood on the north side of the river. He declared that he had never suffered from ague, but that any cold or chill throws him into a feverish state. Although he was not aware of it, there was at the time of examination a certain amount of feverish action present, quickened pulse, hot hands, &c.; liver not enlarged; abdomen meteoric. It would seem as though during these years his system has become so accustomed to the febrile orgasm as to find little inconvenience from it, a kind of feverish constitution being generated and the symptoms becoming wonderfully tolerable. I have never remarked dropsy in connexion with spleens of enormous size, probably because less pressure is exerted on the vessels of the portal system than is the case where the diseased organ begins to shrivel and contract. Neither do I remark the presence of fever where ascites and contracted spleen are found. I had one case of continued fever of precisely 7 days' duration, unaffected in its progress by sudorifics, purgatives or quinine. It was attributed to cold, and was attended by high fever and acute bone-pains. On the 6th day the pulse became variable in force and frequency, and on the 7th it fell from 120 to about 80. There was not the least periodicity observable at any time.

Venereal Diseases.—The forms encountered, with the proportions in which they occurred, will be learned from the following list:—Gonorrhœa, chordee, gleet, 19; bubo, orchitis, 5; phymosis, 5; adenoma, 3; venereal ulcers with general rheumatism, 2; ulcerative destruction of soft palate, with loss of voice, 2; ulceration of soft palate with destruction of bones of nose, 2; sinuses, 4; syphilitic laryngitis with paroxysms of dyspnœa, 2; rupia, 2; venereal ulcer, 13; phagedænic ulceration, 2; cheloid and condylomata, 6; syphilitic hardness of calf with cicatrices, 1; periostitic nodes, 4; diffused periostitic tumour over right temple, interfering with opening of the jaws, 1; endocranial tumour giving rise to epileptic convulsions, 1; eczema rubrum syphiliticum, 1; secondary syphilis, 17; tertiary, 6; with unbendable forearm, fixed jaw and psoriasis, 1; with ulcerated eyelids, cheeks and throat, 1; with contraction of ham-strings, 1; with enormous ulceration of legs, thighs and perinæum, 1; with hoarseness, peculiar ulceration of the mucous follicles of the tongue and pharynx, followed by copper-coloured eruption after use of iodide of potassium, 1; abnormal tubercular eruption on face and neck, with raw tubercles and scrotal eruption of 4 years' standing, 1; In one case the nose was gone, a mere oval hole occupying its place, uvula gone, pharynx scarred and cicatrized, voice husky, and large cicatrices on nates, shoulders, elbow joints, forearms and shins, which are symmetrical on both sides of the body. The man contracted the primary ulcer 8 years ago, ulcerative rupia appearing 5 years since. The face is now one smooth, shining cicatrix partially ulcerated and encrusted at the margins of the cicatrix. A boy presented himself with collapsed nose from syphilis, the nostrils full of large vegetations and partially adherent. The retention of a couple of grass stalks within the nostrils sufficed to allow of free respiration and to keep the orifices patent until the action of remedies had induced a healthier and firmer condition of the diseased parts. Destruction of bones of the nose by a huge fetid encrusted ulcer, with loss of substance of upper lip, but no cicatrix of

chancre or bubo, 1; anomalous ecthymatous eruption over the body, with enormously enlarged lymphatic glands in both groins, 1. In one case there was a congeries of four phagedænic ulcers on the hip, with numerous ulcers on the ham and leg; the cicatrix of a bubo contracted 9 months since in the left groin remained, the glands being still in a state of chronic enlargement; in the right groin they were at least twice their natural size. Evidently therefore a bubo cannot be trusted to drain off the syphilitic virus. Lameness, and immobility of left shoulder and elbow from syphilitic periostitis, 1; anæmia with swelling and tenderness of one-half of scalp above right ear, with suspected periostitic inflammation underneath, history of venereal disease, convulsion fit 3 months before, 1.

Accidents, Injuries, Operations, &c.—Several cases of disease presented themselves demanding surgical interference. Of these only the more interesting or important need be noticed.

1°. Rupture of the circumflex nerve, with paralysis of the deltoid muscle, from a fall on the shoulder. 2°. Fracture, without displacement, of the tibia just above malleolus internus by a kick from a water bullock. 3°. Removal of canine tooth from centre of roof of palate. 4°. Necrosis of shaft of humerus in a little boy, after small-pox and abscesses, the upper extremity of the dead shaft exposed and projecting for 3 months. I removed at least half the length of the shaft in one piece by operation under chloroform. The lower end was worm-eaten and pointed, and closely invested by a matrix of vascular new bone, the upper bearing the evident impress of the epiphysis which saved the joint. 5°. Cancrum oris with sloughing away of the entire right cheek following ague; fatal within a month. 6°. Malignant tumour of the left orbit, removed by operation. No part of the eye was visible, and great pain was complained of in the eyeball and orbit. It had been growing for above a twelvemonth. It was removed under chloroform, and found to be a congeries of scirrhous tumours originating in the lachrymal gland and extending completely round the eyeball, which was thus enclosed on all sides and in front, but itself uninvolved. The whole mass, together with the eyeball, was removed without difficulty, and the eyelids preserved. There was considerable bleeding, which however was speedily arrested by stuffing the orbit with wet compresses and passing a bandage over all. The man returned in a month from Changsha, the capital city of Hunan, to report himself quite well, free from the pain which used to torment him, and with the sight of the sound eye somewhat improved. The appearance of the other orbit was simply that observed in ordinary cases of collapse of the eyeball with a shrivelled stump. 7°. Disease of the shaft of the tibia with three superficial cloacæ, in a boy aged 18. Discharge sanious, not purulent, and without the peculiar fœtor of necrosis. There is remarkable broadening and deformity of the bone, giving the idea of hypertrophy or cystic abscess. 8°. Young man, aged 25, suffering from huge scirrhous enlargements on either side of the neck, extending into the parotid region. The tumours pressing inwardly and causing swelling of the tonsils, affect both voice and deglutition. 9°. Gun-shot wound of right ankle, the ball entering the tibia just in front of the inner malleolus, and passing out in front of the outer, traversing the bone just above the joint. The mobility of the ankle joint was unimpaired, but discharge continued (for a year and a half since the accident) from both openings, with a painful, swollen state of the parts implicated. The ball was extracted at the time. There was evidently some carious bone deep-seated in the cancellous tissue. Injections passed right through from the inner to the outer opening. Applying a tourniquet to the limb, and administering chloroform, I first enlarged the external opening, and then gouged the passage clear, and maintained a seton in it for a week. Stimulant and astringent injections with bandaging were afterwards employed daily, but at the end of 6 weeks I was disappointed to find that the passage through the bone was still partially permeable. 10°. Elephantiasis of right leg and foot, which are converted into a brawny mass, but pitting on heavy pressure; the skin of the heel and dorsum of the foot is roughly papillated. There is no pain, but there is a want of mobility in the parts, and deficient sensibility. Arsenic internally, with bandaging and mercurial dressing, effected a marked diminution in the volume of the limb within a month.

During the past year there were two cases of confluent small-pox, of which one was fatal on the tenth day. Twenty vaccinations were performed. An innumerable number of fractures were set, dislocations reduced, or attempts at reduction made, abscesses opened, sinuses split up, and other minor operations performed.

Dr. David MANSON's Report on the Health of Takow and Taiwan-foo for the half year ended 30th September, 1871.

The port of Takow is situated on the west coast of the Island of Formosa, in lat. 22°36′14″ N. and long. 120°16′ E. It lies close to the sea. The land in the neighbourhood is, with the exception of Ape's Hill to the north, flat and richly cultivated, forming a large plain extending inland about 20 miles. Beyond this are the mountains forming part of the great central ridge of the island.

Taiwan-foo lies about 25 miles north from Takow. During the south-west monsoon more than four-fifths of the foreigners in South Formosa reside in Takow. The report for the past season will therefore apply to Takow.

The following table shews for each month the maximum, minimum and mean temperature in the shade, and the number of days on which rain fell :—

MONTH.	HIGHEST.	LOWEST.	MEAN OF HIGHEST.	MEAN OF LOWEST.	DAYS OF RAIN.
April,	84° F.	70° F.	80° F.	74° F.	1
May,	87°	79°	85°	80°	10
June,	89°	80°	86°	81°	7
July,	88°	78°	84°	80°	12
August,	88°	80°	85°	81°	13
September,	87°	79°	84°	80°	17

It is seldom that rain falls in quantity for a continued period. The figures in the sixth column of the above table represent for the most part heavy thunder showers, which fall in the afternoon of every second or third day during the months from May to September.

There is a supply of good water within easy access of the settlement. The number of residents in Takow and Taiwan-foo during the period reported on was 30. The general health of the community was good, 2 cases of remittent and 4 of intermittent fever being the only instances of climatic disease which came under notice, and these were of a mild type and readily yielded to quinine. In one of the cases of remittent fever change of climate was necessary. One of the cases of intermittent fever could be distinctly traced to the subject of it travelling at night through a malarious district. The fever quickly yielded to quinine, but was followed by very acute neuralgia of the supra-orbital nerve, recurring once and sometimes twice daily, and lasting from half an hour to an hour. Quinine in large doses failed to check the recurrence of the paroxysms, and the hypodermic injection of morphia had no permanent effect. Arsenic was then tried, and under its use the paroxysms became less frequent and less severe, and in about a week disappeared altogether.

There was one case of urinary calculus, the stone fortunately passing by the urethra. The subject of it had been about two years resident in the island.

The health of the men on board vessels frequenting the port of Takow during the summer months was very good. The crews of 50 vessels came under my care during that time, each vessel carrying on an average 12 men, mostly Europeans. The diseases acquired in port were—

Intermittent Fever,	6 cases.	Dysentery,	2 cases.
Diarrhœa,	9 „	Acute Rheumatism,	1 „

There were no deaths.

Disease among Natives.—During the six months there were treated at the hospital over 1,200 cases, about one-sixth of the number being females. Most of these came from a district comprehended within a radius of 20 miles north, east and south from Takow; that is from the flat country lying between the sea and the mountains, but some came from a much greater distance. During part of last winter the hospital had as an in-patient one of the aborigines from the east side of the island, who described himself as a chief of one of the savage tribes. He was suffering from tertiary syphilis, and was dismissed greatly improved. He came back to hospital in the early part of last summer for a fortnight, and departed with the intention of returning in a few months accompanied by his wife and several members of his tribe who were, judging from his description, suffering from the same disease as himself. The patients as a rule are grateful for the benefit they receive, and are willing and often eager to submit to operation.

No cases of leprosy presented themselves for treatment, although it is a well known fact that that disease is by no means uncommon in the district.

The principal diseases treated have been in the order of frequency, as follows:—

Diseases of the Eye,	251 cases.	*Diarrhœa,*	23 cases.
Intermittent & Remittent Fevers,	233 „	Asthma,	18 „
Enlarged Spleen,	107 „	Dysentery,	15 „
Chronic Ulcers,	106 „	Enlarged Liver,	9 „
Chronic Rheumatism,	81 „	Gôitre,	3 „
Dyspepsia,	81 „	Diseases of the Heart,	2 „
Syphilis,	53 „	Aortic Aneurism,	1 „
Diseases of the Skin,	51 „	Urinary Calculus,	1 „
Phthisis,	40 „		

The remaining cases were of no special interest.

Diseases of the eye are very common. One cause of this is found in the showers of very fine sand, which are everyday occurrences during the N.E. monsoon. The sand is brought down in the form of a very fine powder, *by the strong northerly winds, from the country lying to the north. The continued irrita*tion thus caused gives rise to chronic inflammation of the eye with all its evil results.

The following table will shew the types of the malarial fevers, and their frequency in the different months:—

	April.	May.	June.	July.	August.	September.	Total.
Quotidian,	9	24	16	17	21	22	109
Tertian,	7	7	4	9	13	10	50
Quartan,	5	6	6	6	16	11	50
Total,	21	37	26	32	50	43	209
Remittent,	0	2	3	6	3	10	24

In a number of these fevers a marked tendency to congestion, especially of the spleen, was observed. In some of the cases of remittent fever there was great and sudden prostration accompanied by low delirium. In two instances, which were fatal, besides the prostration and delirium there was oozing of blood from the fauces, such cases requiring the energetic use of stimulants. General blood-letting was never indicated. These fevers directly or indirectly form the principal cause of death among the natives.

Enlarged spleen is common. It is associated with anæmia, and frequently with ulcers of the legs, which occur more frequently on the left than on the right leg. These cases improve greatly under the continued use of iron.

In treating the chronic ulcers so common here I have tried in a number of cases to accelerate healing by the transplantation of skin. My great difficulty at first was in the management of the dressings. Having to change these at least twice a day in order to keep the surfaces clean, the small portions of skin were displaced and lost. To obviate this difficulty I now place over the ulcer, immediately after transplanting the skin, a piece of fine gauze—part of a mosquito curtain,—which has been previously soaked in carbolic acid. Over this I put a couple of folds of lint with carbolic acid, a piece of oiled silk, and over all a few turns of bandage. When it is necessary to change the dressings I remove everything except the gauze, when the surface of the ulcer can be cleaned by pouring water over it, and the new dressings can be adjusted without displacing the particles of skin. Several cases have been successfully treated in this manner, but I find that frequently, after all has been going on well for several days, the ulcers, notwithstanding the use of quinine, take on a sloughing action, and thus more time is lost than is gained. On the whole I have learned that these ulcers can be healed as speedily by ordinary local applications, and the administration of tonics, especially iron, and nourishing diet. Beef tea will frequently be efficacious where drugs have failed.

Phthisis is common in the district. There is nothing to remark about it except that it is of a very chronic nature.

Gôitre is common among the inhabitants of the lower ranges of hills at the foot of the mountains. Heart disease is very rare, and there have been only two cases of valvular disease in hospital during the summer. Stone is sometimes met with, one case presenting itself this season. The patient, a middle aged man, was admitted with the symptoms of stricture. On passing an instrument a stone was detected impacted in the urethra, but after a few days' dilatation by means of catheters, it was voided with the urine.

Fibrous tumours of the neck are not uncommon. They are sometimes of very great size, but are freely moveable and suitable for operation.

Dr. F. WANG's Report on the Health of Canton for the half year ended 30th September, 1871.

In submitting the following Report on the health of Canton, I have to observe that it does not pretend to offer anything new or of interest to the medical profession. The foreign community here is small, the climate is generally healthy, and the diseases are such as commonly occur in hot climates, requiring no special comment or treatment.

We have had a remarkably cool summer, owing to the unusually long period of rain. From the middle of May to the end of September it rained nearly the whole time, with intervals now and then of a few days of fine weather. This long wet season was rather trying to such persons as were liable to rheumatic and neuralgic affections, or were labouring under diseases of the respiratory organs, but to the strong and healthy, whose only dread was heat, it was a very pleasant summer.

The general health of the foreign community was very good, the cases of illness having been few in number and, with scattered exceptions, not severe in character. Among the Chinese the general health has also been good, as it has been for the last two years.

Epidemics.—In the city of Canton an epidemic of small-pox broke out during the latter part of 1870, extending over the spring months of this year. The country villages round about, and many districts, such as Hiang-shan, several days journey from this place, were also visited by it. In point of mortality this epidemic was considered moderately severe, not being so virulent as that which occurred some years ago. The deaths were estimated by a person who vaccinates largely among the natives to be 20 to 30 per cent. among the unvaccinated, and very inconsiderable among the vaccinated. In an epidemic *some years ago, the rate of mortality was as high as 40 to 50 per cent. among the unvaccinated.* It is supposed that there are about 50 or 60 professional vaccinators in Canton, and that about one half of the children of the city are now vaccinated. Only one foreigner took the disease. About the same time with the small-pox there was also a considerable prevalence of measles in the city. Cholera has not visited Canton for many years; I think nothing like an epidemic has occurred since the year 1858.

The foreign population of Canton, exclusive of shipping, is about 180. Of this number 2 died, both being tidewaiters in the Customs, one from a gun-shot wound of the lung, the other from the effects of long standing asthma and excessive drinking.

The diseases prevalent among foreigners during the summer were diarrhœa and fevers; next came a few cases of rheumatism, neuralgia, catarrh, dysentery and liver affections. Three cases of whooping-cough occurred among the foreign children, a very rare phenomenon, as neither I nor others had seen any for 10 years back. Diarrhœa cases were very numerous, owing doubtless to the excessive fall of rain.

Among the Chinese population the diseases prevalent during the same period were intermittent and remittent fevers, diarrhœa and dysentery, summer cholera, ophthalmia and boils. Ophthalmia, though a disease not confined to any season, is more prevalent in summer, owing doubtless to the heat and glare of the sun. Fever in its various forms constitutes the bulk of the practice of Chinese physicians. When the cold weather set in at the latter end of September this year, the severer forms of fever disappeared, and were succeeded by catarrhal affections and mild intermittents.

As to the general type of disease, the fevers from which foreigners suffered were all of the intermit*tent type; among the Chinese of the city, however, remittent fevers occurred with considerable frequency,* and were sometimes of a virulent character. In fact the diseases that prove most fatal to the Chinese population of the city every summer are remittent and continued fevers, including under these some fevers that are more or less amenable to treatment, and others of the most intractable character. For the treatment of fevers, especially when of the continued form, the Chinese rarely send for European physicians, and it must be allowed that in these cases the native faculty manage to make many cures. The diarrhœa and dysentery of the Chinese are mild, while liver affections, such as congestion and inflammation, so fatal to *foreigners, are rarely, though sometimes, met with among them.*

Leprosy, both anæsthetic and tubercular, is quite common among the natives here. I believe that no Europeans, have in this, the oldest port of China, or in any other port opened to foreigners, ever been affected with it, either by long residence, or by coming into contact with the natives.* A statement which I have seen to the effect that this disease cannot be communicated by sexual congress, ought, I think, to be received with extreme caution. I have observed many cases of leprosy, and in former years have treated a few. Dr KERR of this port has also had a few cases under his care for some months, but I cannot say that we have arrived at anything at all satisfactory as to their cause or treatment. Obscure cases of leprosy are often brought to the hospital for diagnosis, and it is of some consequence to a physician in a leprous district to be able to distinguish the disease from other similar affections that are more or less amenable to treatment.

Stone in the bladder is extremely common in this province, although it is not met with at Amoy, Foochow, Shanghai, Ningpo, Hankow, or Peking, where missionary hospitals have been established. Ever since the existence of mission hospitals here, many operations for stone have been annually performed, but of late years the number has greatly increased, reaching 35 in 1869, and 49 in 1870. From 1856 to to the end of 1870 there were 217 cases operated upon in the hospital under Dr. KERR's care. With the exception of one case which came from Kwangsi, they were all from 22 districts in this province, as may be seen by the following table copied from Dr. KERR's notes:—

Tung-kun,	47	Shan-tak,	8	Pok-lo,	3
Pun-yu,	45	Tsing-iin,	6	Tsung-fa,	2
Nam-hoi,	31	Sam-shui,	6	San-on,	1
Tsang-shing,	11	Hiang-shan,	5	San-ning,	1
San-ui,	10	Ko-ming,	4	Yau-p'ing,	1
Sz-ui,	8	Hoi-p'ing,	4	Ka-ying-chau,	1
Fa-iin,	7	Wai-chau,	4		
Ko-iu,	8	Hok-shan,	3	Kwangsi,	1

Of the cause of the prevalence of this disease here, as well as its absence from the places mentioned, I am unable to give a satisfactory explanation. It is equally difficult to account for its prevalence in some parts of England more than in others. The causes and conditions favourable to the production of stone are supposed to be humid climates and moist localities, the gouty diathesis, sedentary habits of life, excessive use of malt-liquors and animal food, indigestion, mal-assimilation and fermentation, impairment of the vital powers, and acidity generated in the stomach. With regard to the influence of certain kinds of waters and spas in inducing stone, it has been proved to be entirely imaginary, none of the forms of calculi corresponding with the salts which exist in natural waters. In addition to this, it will settle the question of waters, when I say that the Chinese always drink boiled water, the lime of which, in the process of boiling, settles at the bottom of the kettle. Now, as the causes and conditions here enumerated exist more or less in other parts of China, as for example at Amoy and Shanghai, the great wonder to me is, not the prevalence of stone here, but its absence from the other ports. The gouty diathesis appears to have little to do with its prevalence, as gout is scarcely ever met with among the native population. Chronic rheumatism is common enough, but this is found among the poor all over the world. Occupations and localities seem to produce some liability. Taking all the 217 cases recorded in the hospital reports, I find there are 53 in which the patients' occupations are not given,—these being children and boys with the exception of a few adults. Of the remaining 164 there were—

Farmers,	93	Carpenters and Masons,	7	Weavers,	4
Labourers,	20	Boatmen,	7	Mechanics &c.,	7
Shopmen & Traders,	20	Scholars,	6		

* Erasmus WILSON *(Diseases of the Skin,* 6th Ed. p. 633*)* gives the case of a European who after 14 years residence in Hongkong shewed decisive symptoms of anæsthetic leprosy. The disease made its first external appearance in the form of a red and slightly raised blotch on each cheek. Four years later insensibility of the skin and numbness of the limbs were noticed. After another period of four years the tips of the fingers became pale, and their numbness increased. Within a twelvemonth more the patient died suddenly, in the 50th year of his age, the immediate cause of death not being recorded. R. A. J.

It is to be noticed that a large proportion of the patients were farmers, yet it is not likely that the active occupation of farming should of itself predispose to the disease. I have been told that the wealthy classes are not exempt, but I have rarely seen any of them among the stone patients of the hospital. One reason of this may be that they form but a small proportion of the general population.

Dr. John Dudgeon's Report on the Physical Conditions of Peking, and the habits of the Pekingese as bearing upon Health.

(First Part.)

To prevent repetition in future Reports, and for the better understanding of the diseases to which I shall from time to time refer, it is important at the outset that the physical conditions of the Peking district should be somewhat minutely sketched. The present paper will, therefore, almost exclusively be devoted to the subject of *Fêng-shui* in its literal sense, as probably the exact translation of the Indian word for climate, "air and water," and not in its superstitious or geomantic sense, as at present interpreted by the Chinese. The usual local Chinese expression for climate is "water and earth" influence, and as one author remarks that "Man is in more respects than one the mere expression of the soil on which he lives," I will in the sequel attempt to note as briefly as possible the medical topography of Peking and its neighbourhood, confining my observations to what has either a direct or indirect bearing upon health and disease, and hoping thereby to meet the objects contemplated in these Reports, namely the relation of disease to season and alterations in local and climatic conditions. I shall be led to review the local causes producing and influencing epidemic and endemic diseases, such as the endemic atmosphere, the water supply, social habits, solar influences, geological conditions, degree of cultivation and population of the soil, prevailing winds, &c.

Situation.—Peking is situated in latitude 39°52′16″ N., and longitude 116°28′54″ E. With the exception of Kalgan and Newchwang, it is the most northerly foreign-occupied place in China. It is divided into two parts, a northern, or as some call it, Tartar city, the capital properly so termed because the residence of the Court, and the Chinese or southern city, a walled suburb. The former is surrounded by a high and broad brick wall, pierced by nine gates, whence the name sometimes applied to it—the city of the nine gates. It is $3\frac{2}{3}$ miles from N. to S. and $4\frac{1}{3}$ miles from E. to W. The circuit of its wall is $14\frac{1}{2}$ miles. The southern city is 5 miles from E. to W. and $2\frac{1}{4}$ miles from N. to S. Excepting the south wall of the northern city, which is its north wall in part, its circuit is 10 miles, thus making the circuit of the outside wall of both cities about 20 miles.

The capital is situated in the midst of a sandy plain—part of the great alluvial plain of Chihli,—having a range of hills to the north distant about 30 miles. These hills may be said to separate China from Mongolia. The loftiest ridges are traversed by the Great Wall. On the west there is also a range of hills, spurs as it were, running south from the northern ranges, and distant from Peking about 12 miles. These rise to the height of several thousand feet, and are destitute of trees or cultivation of any kind, except in patches in the valleys or in the neighbourhood of monasteries, which latter are frequently found perched on beautiful spots on the hill sides or in sequestered glens. In a climate such as this, with drought and consequent famine threatening the people yearly, it would be well for the government to take measures to obviate these dangers. Experience tells us that more rain falls and more dew is deposited in well wooded countries than where the country is naked. Mountains, especially where covered with forests, collect clouds, condense the vapours of the air and equalise the fall of rain. The temperature too is rendered more equable throughout the year, for without trees the land is subject to more rapid evaporation. In tropical regions the air of a wooded district is cooler and contains more humidity than that of an open country, and is consequently better suited for inhaling on account of its soft coolness.

The plain is for the most part under cultivation, two crops being produced annually. Much of the salubrity of the climate is doubtless due to this extensive cultivation, which abolishes marshy land. The ground is tolerably drained by the roads, which are here the real courses of the minor streams. The soil is not very compact or adhesive, and hence absorbs and parts with heat with great rapidity, which may to some extent explain our great summer heat and winter cold; for certainly climate is not influenced merely by latitude and elevation, but among other things by the surface of the country. Tientsin and Newchwang, although both situated nearer the sea, are in winter colder than Peking. Newchwang has a much cooler summer, while Tientsin from its exposed position on a great plain is, I believe, warmer in summer,

In the neighbourhood of Peking the ordinary cereals, legumes and fruits of North China are extensively raised. These are wheat, barley, maize, three kinds of millet, buckwheat, yams, sweet potatoes, beans, various kinds of melons, cabbages, cucumbers, carrots, turnips, radishes, egg-plants, onions, celery, parsley, pepper, spinach, tobacco and cotton, with such fruits, in the order of their appearance at market, as apricots, cherries, plums, peaches, apples, pears, walnuts, grapes, persimmons, chestnuts, ground-nuts, &c. Besides these, the jujube (fruit of the zizyphus vulgaris, improperly called "date" by Europeans), the seeds of the lotus or water-lily (nelumbium speciosum), which grows extensively on the lakes in the Imperial city, the salted seeds of the water melon, and salted beans are extensively eaten by natives.

Although the hills are destitute of wood, the plain, from elevated spots such as the Observatory or the western hills, seems well wooded. The principal tree is the *hwai-shu* (sophora japonica), which is large and handsome. Willows are also very common, especially around wells. Other trees are the elm, poplar, oak, mulberry, lilac, &c. From the walls of the city the view of Peking is very striking. The lofty city gates, the yellow roofs of the Imperial palace, the green-tiled roofs of the princes' palaces, and a few pagodas and temples form all that is to be seen. The dirt and squalor of the miserable streets entirely disappear from view, being hidden by the foliage. No other city probably presents such a scene and such a contrast.

Water Supply.—The chief supply of water comes from the *Kwĕn-ming* lake in front of *Wan-sheu-shan* (Yuen-ming-yuen gardens), and it again is supplied by springs in the neighbouring hill of *Yü-chien* to the west. This water is sweet, soft and exceedingly pure, and equal if not superior to the far-famed Loch Katrine water with which Glasgow is supplied. This is supplemented by aqueducts from the monasteries Pi-yün-sze and Wo-fo-sze, where two springs exist, the former being a well-known sulphuretted hydrogen cold spring. The lake sends off two streams, the larger of which runs north and east and joins the Shaho and ultimately the Peiho, while the smaller is conducted in an open canal to the N. W. angle of the city, where a large tank exists for its storage. From this point part of it flows into the city and fills the lakes to the north outside the Imperial city, those at the west inside the city, the so-called lakes at the marble bridge, and the moat around the palace proper. The other portion of the water flows along the moat to the north and east of the city walls and joins the canal—the end of the Grand Canal—which runs to Tungchow and joins the Peiho. Before the advent of winter, the west and south moats are also flooded from the same source, with the view of affording a sufficient supply of ice. Formerly all the moats were navigable for flat bottomed boats. Along the banks of the eastern moat are to be seen vestiges of magnificent granaries built for the reception of the tribute grain and rice sent from the provinces, but during the troublous times of the last two reigns, officials and people gradually carried off all the material of which they were built. A considerable quantity of water still fills the east, north and north-west moats, but, except in very wet seasons, the other moats are either dry, affording pasture for sheep, or are filthy, sluggish streams made up of sewage and surface water which, fortunate enough to find an outlet here, meanders through the moat, every here and there forming stagnant pools, the resort of pigs and ducks. This is especially true of the moat between the two cities. Several weirs or dams exist at various points in the moats, as there is a fall of several feet from north to south. In the Tungchow canal similar weirs exist, the fall from Peking to Tungchow being about 50 feet.

These moats supply sufficient ice for summer consumption, for the preservation of fish, meat and fruit, and for other purposes. Ice-houses or pits stand along the banks, covered with mats and earth. The ice is dug out in large blocks and there stored. It is sold at a very low price (about 8 lbs. for a penny), and is largely used by the inhabitants, who keep masses of it in their rooms to reduce the summer temperature. Much ice is consumed during summer by the Chinese, particularly in their well-known beverage acid-rice-water. They likewise cool their fruit with it. The purest ice is of course taken from the north-west, north and east moats, and especially from the first. No ice is allowed to be taken from the Imperial city lakes. The lakes close to the Heu-mĕn supply in part the inhabitants, and the remainder is carried into the palace and there stored. The water for the Emperor's personal use is brought daily in tin vessels on seven or eight men's shoulders from *Yü-chien-shan* distant about 8 miles to the north-west. A large quantity of ice for use in the Chinese city is taken from the central moat.

The Peiho flows about 13 miles to the east of Peking. The *Hwenho* or muddy river, called in edicts the *Yungting*, passes Peking to the south-west about 8 miles distant.

Wells.—In respect of wells Peking is probably unsurpassed by any city in the world. They are to be found in almost every lane, and in the great thoroughfares four or five, if not more, may be met with within a mile. They are never exhausted. They are placed generally on alternate sides of the streets, and are for the most part surrounded by willows, which in summer afford a grateful shade, and are the first to herald the approach of spring. Besides these public wells, almost every private house of any consequence possesses one or more. The wells in the eastern part of the city are mostly brackish, except in the neighbourhood of the canals or running drains, where, as may be supposed, surface water filters through the soil. The hard water on boiling deposits a large quantity of lime. On the western side the water is much softer, doubtless from proximity to the lakes, for I suppose the substratum to be the same in both parts of the city. The farther west one goes the better is the water. The wells are very deep, usually about 30 feet. The water drawn from them in summer is quite cold, and meat put into them is kept perfectly fresh. In winter moreover they never freeze. The Chinese use the sweet water for infusing their tea; they wash or rather wipe their hands and faces in warm water, and seldom drink cold water. The brackish water is used for all ordinary cooking purposes, but I have seen no bad effects of any kind which could be traced directly to the use of this water, except perhaps some diarrhœa in summer, and then probably the use of unripe fruit, or the drinking of warm tea immediately afterwards, may have had more to do in causing it than either the cold water or ice. Gravel and calculus are practically unknown. The wells are leased to natives of the province of Shantung, who have a practice of bandaging their legs from the knee downwards, with the object of strengthening and supporting their calves, and so aiding them in following out their occupation. Standing as they do all day drawing water, the device is a good one against varicose veins and "falling down of the belly of the legs," as they express it. The street wells are intended chiefly for the watering of animals and the supplying of such shops and houses as are destitute of private wells. Man and beast may here slake their thirst at any time during day or night, and being constantly in use the water is less brackish or bitter than that of the wells less frequently used. It costs about a penny to water a beast of burden ten times. Men and dogs go free. Rabies is extremely rare. I have not met with a single case in eight years, and I have heard of only one. Dogs are never muzzled, but every householder owns one or two, so that in regard to our canine friends Peking is not behind the Turkish capital. The waste from the wells is collected in tanks from which the streets are watered. If the dust were always so laid we should have reason for congratulation, but it is more frequently the dirty water of the drains or ditches, presently to be described, or that collected in the houses and shops and stored up during the day, that is employed. The watering process takes place about sundown, for the soil being very dry and the water therefore rapidly absorbed, the labour of the police would at an earlier hour be partly thrown away, while before four o'clock the officials would be likely to object to the disagreeable odour. The well-water, when used, gives freshness to the streets, but the filth from the cesspools and stagnant drains creates a new smell, to which foreign olfactory nerves have never before been subjected. This leads me to speak of the condition of the streets and drains.

Drains.—In regard to drains also, Peking stands unrivalled among the cities of the world. Their age, extent, former admirable adaptation and present ruinous condition are all alike striking. The Peking system of drainage was once perfect. All the main streets have two large sewers, one on each side, built of massive brick and covered with granite slabs or blocks. They are about 5 feet high and 3 feet wide, with branches to all the lanes. The water from these drains empties itself into the moat, and thence flows into the Peiho. This was the former and normal condition. At present the drains are in utter ruins, standing generally high above the level of the streets, and where they are still under the surface they have become completely blocked up with dirt. In the spring of each year they ought, by law, to be thoroughly cleared out, but instead of this, they are opened only here and there, particularly in the neighbourhood of the police stations, and a few feet of earth are dug out each way. They remain so for a month or two,

rendering pedestrianism, at night especially, very dangerous. No one of course dare venture into an unknown, or even a familiar quarter, without a lantern. A superficial inspection follows, the open mouths are closed, and this process is yearly repeated, the channels still remaining impervious. Those that are free in parts of their course are sure after heavy rains to open somewhere into the streets, deluging them with sewage water which forms ponds of putrid mud and filth; the remainder flows on, to enter the drain at a distant point and there to repeat the above act, until after several similar evolutions it finds itself in a canal or in the city moat. By-and-bye the mud dries and is used for repairing the roads. In windy weather it is blown about everywhere and proves very offensive. The blocked up drains are obviously the best, because the safest and least hurtful.

The attention of the founders of Peking and of the Emperors of China, from the days of KUBLAI Khan who built this city in 1280, to the reign of KIENLUNG who died in 1796, seems to have been much occupied with the water supply, and hence the very elaborate system of water courses which traversed the city. In consequence of poverty and ignorance, the channels and embankment shave never been repaired, and thus it is that the feeding channels, blocked up by rubbish, serve no good purpose, and the water being allowed to make a way elsewhere for itself is utterly wasted. As already stated, the whole system of water courses is now in ruins and choked up with earth. At a former time these drains were very effective, and were flushed and scoured by the water courses.

Streets.—The principal characteristic of the Peking streets which attracts the notice alike of foreigners and natives is their great width. In this respect the capital differs from all other Chinese cities. The great thoroughfares running north and south, east and west, of both cities, are about 120 feet broad. The lanes, which run at right angles to the former and parallel with the latter in the Tartar city, and in converse directions in the Chinese city, are usually broad enough to admit two or more carts to pass. The gentry live in the lanes, the shopkeepers and traders generally in the great streets. The lanes are quieter, higher, freer of dust, and better protected from the north wind. The main streets are in general much below the level of the houses and lanes. This has been caused principally by the light sandy soil being cut up by carts, and then blown away by the wind. In the middle of the street a portion, the breadth of a lane, is reserved for carts and traffic generally, and is elevated by excavating large pits or ditches on each side, from which the central portion is repaired. Various useful and economical purposes are served by this plan; the roads are easily and cheaply repaired, and reservoirs are made for collecting rain, surface and refuse waters, from which the streets again are handily watered. These ditches moreover in the rainy season stand in place of, and make up for the want of the useless and choked-up drains, and at the same time prevent the roadway from being inundated and so rendered useless for traffic so long as the rainy season continues. But for these ditches large tracts of the city would be flooded for three months of every year. As it is, the lower part of many streets is frequently under water for days, and hence arises the difficulty and danger of locomotion at this season, especially in carts. It is in this way that cases of drowning occur in the streets of the capital, incidents which, though seemingly incredible, occur with frequency every year, in consequence of the slipping of ground or the capsizing of carts. In the rainy season there is often from 8 to 10 feet of water in many of these ditches, and the high part of the road is in addition frequently submerged to a depth of from 2 to 3 feet. Millet stalks are generally placed along each bank to indicate the line of road, or men and boys are at hand to carry passengers across on their shoulders, or to lead carts and animals.

The Peking streets are, moreover, public latrines, in which large quantities of animal excreta are daily deposited. Public urinals do not exist. The general disrepair of streets and houses easily and speedily produces its mental, moral and physical effects. There is hardly any part of any street, even of the busiest, that is quite free from one kind of nuisance or another. Besides its imperfect drainage, the chief drawback to the healthiness of the city is unquestionably the evil habit of the people in thus throwing most of the filth and refuse of their houses into the streets. Fæcal matter is however carefully collected, and for the most part carried outside the gates, where it is dried and sold for manure. Human excrement so prepared is the most expensive of all kinds of manure. Outside some of the gates, as for example the Anting-mên,

large hillocks of it may be seen. Being ignorant of chemistry, the Chinese adopt no deodoriser to prevent a nuisance in the locality of these "bins." They are unaware of any plan for the transformation of fæcal matter into manure, other than by drying it in the sun. It would be an instructive lesson for Chinese ambassadors when they visit western countries to examine the various chemical processes for the utilisation and disinfection of fæcal matter, such for example as those vast depositories of this substance at Bondy near Paris, called "Voiries." The air around these Chinese collections is greatly vitiated, as our olfactory nerves tell us but too plainly, when duty or pleasure takes us to their neighbourhood. The men employed in carrying this substance out of the city seem however healthy and strong, and, so far as I know, do not suffer particularly from the atmosphere by which they are always surrounded. In western countries such work is carried on by night, here by day, and this is one of the most unpleasant things met with in our streets. Much that is recommended in the way of ventilation, water supply, and disinfection of privies at home is here rendered unnecessary. The male population as a rule squat on the public streets at all times, but especially at night. The manure collector is busy day and night, and were he not alert his trade would entirely pass out of his hands. As it is, our unpaid public scavengers, our invaluable sanitary commissioners, pigs, dogs and crows, are formidable competitors. All the advantages claimed for the dry earth system or movable boxes are gained here free of expense to the individual or public. The industrious and frugal habits of the Chinese, and even their very poverty, thus work to their advantage, (all sanitary measures more than repay their cost,) for it compels them to utilise all excrementitious matter. To these habits, to the circumstance that manure of all kinds has a high market value, the clear sky overhead and the dry, sandy, absorbent soil under our feet, we owe much of our immunity from epidemic and endemic diseases. Living in the heart of a large Chinese city, which no other body of foreigners now does, it is reason for congratulation that we are so agreeably and healthily situated, and that although the changes of temperature are great, the heat being tropical in summer and the cold almost arctic in winter, yet from the pleasant and dry weather, there being little rain and much sunshine, with very little fog at any time, we on the whole enjoy a good measure of health, and are safe from the pestilences which frequently desolate other Chinese cities.

Houses.—The houses are, with few exceptions, of only one story. Etiquette forbids that any dwelling should overtop the palace buildings, or infringe on the privacy of others, yet some of the houses are as grand, large and commodious as are anywhere to be found. The internal arrangements, decoration, panelling, balustrading, painting, &c. in houses of the better class cannot be surpassed. All houses of any consequence have their principal rooms facing the south, and surrounded by verandahs; such possess a decided advantage, in summer being never shone into by the sun, and in winter, when the sun is low, having it enter the rooms under the verandahs. These dwellings are considered first in point of honour. The east and west side houses have the morning and evening sun on one side or the other. Houses facing east hold the second rank, and so on, and thus it is that Chinese families are divided according to rank or grade and place of honour. The walls and ceilings are invariably papered with small squares of white flowered paper, the groundwork being made of whiting and the glistening flowery part of talc. Neither the men who prepare these papers nor those who hang them complain of any unhealthiness caused by their occupation. The ceilings of good houses are always of substantial wooden frame-work, those of the lower classes of millet stalks. The latter are put up chiefly with the view of lessening the space to be heated. These ceilings soon get smoked and blackened, and being seldom renewed among the lower classes, become by-and-bye saturated with organic matters absorbed from the bodies and breath of the indwellers, as well as from the open stove, which is universally used, and from the dirty lamp oil. Such noxious gases would seem also to be diffused through the porous bricks and paper walls, and a difference in temperature between the outside and inside would facilitate this change. This is one of the most generally neglected consequences of filth, overcrowding and defective ventilation at home, and still more so must it be in China, where whitewashing is almost unknown. Some have supposed it a common predisposing cause of epidemic diseases.

The coal consumed by the Pekingese is anthracite. It is burnt in open stoves, and being smokeless the houses are not provided with chimneys. Indeed, the superstitious ideas regarding Fêng-shui are dead against chimneys, on the ground that they interfere with the good luck and influence of the locality in some mysterious way, by changing currents of air, influencing the winds and disturbing the spirits. The dust and small coal of the anthracite are wetted with water, mixed with a kind of yellow earth or clay found everywhere a few feet below the surface, and are then worked into balls, which when dry burn freely and give a good red fire. Because it emits no smoke, nothing injurious is supposed to pass from the fire. A large amount of carbonic acid is, of course, generated and injuriously affects those exposed to it, causing as we often see in the winter, headache, stupefaction, fever and asphyxia. Many deaths from the latter occur in this way every winter in Peking. Large numbers have been saved at the hospital, not a few having been brought in in a semi-comatose condition. My predecessor, Mr. LOCKHART, was of opinion that one cause of cerebral affections among the Chinese here arose from the practice of sleeping in rooms heated by stoves in which anthracite and charcoal are burned.

The style of architecture of Chinese houses is admirably adapted to this climate. The high ceilings, the verandahs, the multitude of doors and windows are well suited for both summer and winter. Foreigners have tried to improve upon them, but leaving out chimneys and wooden floors, our changes have not been improvements. With the exception of economy in firing and heating, our houses, all under one roof, are liable to serious objections in the matter of fresh air, free ventilation, and if need be, isolation. Chinese windows are covered with gauze in summer, and carefully pasted up with Corean paper in winter. Every chink or hole is easily covered up with this strong fibrous paper, and double shutters, well papered, add also to the warmth. The roofs are massive, being covered with closely overlapping tiles, with a thick layer of mud and lime with wood, slate or straw underneath, which effectually keeps out the cold in winter and heat in summer. Ventilation is perfect in summer but rather defective in winter. The stoves have sufficient draught to make even the invariably bad coal burn briskly, but the foul air has no exit. The fuel is always bad, for the mode of mining adopted affords only surface coal. Poverty and a cold climate seem to necessitate this condition of things among the masses. The poor cannot afford to allow any part of the heat to escape, so they have it diffused through the room with the noxious gases thrown off from the coal. The stove is most frequently attached to the *kang* or earth platform which is used as a bed in the North, and is made to serve all kitchen purposes. It would be difficult and expensive therefore to introduce western ideas into domestic arrangements.

The *kang* is an institution peculiar to the North of China. It is kept cold in summer and is heated in winter. It is useful in some respects, injurious in others. Among the poor a heated bed-place dispenses with much bed clothing. A Chinaman's bedclothes are generally his every-day wearing apparel, laid over him at night. He has a mattress besides upon which he lies. On the kang asleep, his head is invariably turned to the outside of the bed, the centre individual being directly over the stove. The reason assigned for this position is that it avoids the danger of the bed clothes catching fire, and puts the head,—the heavenly part of man—in a freer and more honourable position. With the head to the wall, the impure air and feeling of restriction and confinement would prove injurious. This union of kitchen, fire-place and bed, gives rise frequently to serious burns among children, and also adults, chiefly opium smokers. The kang has flues arranged under it, through which the heated air passes, and after traversing the kang, finds an exit in front. Among the upper classes the best rooms are heated from without, to which, of course, no objection can be offered. The floors too, are sometimes heated in this way. The floors and kangs are covered with common large square bricks, and the kangs with straw mats in addition. There are no wooden floors. With their thick paper-soled boots and shoes, rendering absorption of damp or moisture impossible, no objection beyond that of want of cleanliness can be brought against their brick floors, but I think I have traced a good deal of neuralgia, rheumatism, anæsthesia &c. to the cold and frequently damp kangs. These affections are most common in spring and autumn, when our vicissitudes of temperature are the greatest. During the latter part of spring, in the summer and in the early part of autumn, the Chinese are much given to sleeping on their cold kangs, or under the verandahs. We know that in exposure to night air during

sleep, there is a lowering of nerve power, and consequent vascular debility, which may account for these affections.

Chinese houses are on the whole well lighted; two sides being almost always composed of doors and windows. The light is well diffused and there is no glare. Glass is now being introduced tolerably extensively in the better class of houses and shops. It is a question, perhaps, how far the Corean paper affects the quality of light as compared with glass, and consequently the health of the people. As a rule the people are pale, especially the women, but this may be owing more to their sedentary habits, impure air, &c., than to any deficiency in the quality of the light. The male portion of the people carry on their trades and live much on the streets. The shops too are always freely exposed to the open air.

Food.—The food of the Chinese here is mixed, although vegetable diet, from its cheapness, prevails. The cow or ox being regarded a semi-sacred animal (because used by the Emperor in sacrifice to the Supreme Being at the Temple of Heaven), comparatively little beef is eaten. For the same reason no bullocks are allowed to be slaughtered in Peking. Buddhist priests and the people of that persuasion refrain from eating meat of any kind, on account of their notions of metempsychosis. How far a vegetable diet may have been inculcated by the founders of Buddhism with the view of depressing the physical energies I know not, but at any rate the plan has not been altogether successful, judging from the large numbers who consult me for enthetic diseases. The chief animal meat taken is mutton or pork. If filthy feeding of pigs induced trichinæ the most disastrous effects would be seen in China, for pig life here as elsewhere is simply revolting. Worms, especially the tape-worm, are remarkably frequent. The Pekingese usually eat two meals daily, composed chiefly or solely of rice or flour and a little vegetable. The hours are regular and early, late and heavy dinners with copious vinous potations being quite unknown. They study their health well in relation to food, clothing, season, climate &c., but there are, notwithstanding all their careful habits, many and grievous defects in their system. Raw and salted or vinegared vegetables, unripe fruit, hot water, tea, confections &c. are too freely partaken of by all classes. Dyspepsia is far too common among so poor and abstemious a people. I cannot in this cursory review enter into the discussion of this wide subject. Too frequent indulgence in the national beverage ought, however, not to be allowed to pass without censure, although the native prepared tea is certainly less injurious than that manufactured for the foreign market. I cannot however agree with Mr. F. P. Smith in thinking that opium smoking is often commenced to relieve the feeling of debility caused by drinking warm tea on an empty stomach.

Drink.—As a rule the Chinese are a sober, temperate people. During 8 years I have seen only two cases of intoxication in the streets of Peking. But though apparently so abstemious, the Chinese consume no inconsiderable quantity of spirits. The great consumption of spirits in western countries is often offered as an apology for opium smoking in China. Every country, it is argued, must have its stimulant, and so must China have hers. There might be some force in this reasoning if, not to speak of her tea and tobacco, she abstained from intoxicating liquors. But this is not by any means the case. The North of China is anything but a teetotal country. In winter especially, a small quantity of whisky is drunk at each meal. This samshu is very coarse, and contains a large quantity of fusel oil, rendering it impossible to drink much of it at once. Immediately after taking it the face and eyes glow with redness. Nearly all their diseases are traced by themselves either to anger or to wine, and dyspepsia is without doubt frequently caused by the constant use of the latter. An inveterate form of this affection called *ye ko*, in which all food is returned, and which ultimately after a few months causes the death of the patient, is universally attributed to spirituous indulgence. The œsophagus in such cases becomes constricted just below the larynx, and all food, even water, is returned. The only treatment which the Chinese have been able to devise for this formidable complaint is bread saturated with the blood of decapitated criminals.

I have already referred to the universal use of hot tea and hot water as beverages. Two other articles deserve mention in this place from their great consumption, namely tobacco and opium. The former, unknown in the last dynasty, or only to a very limited extent towards its close, (1368–1644), is now nearly as universal as tea. Men and women, old and young, are to be seen with the pipe. The native tobacco is mild in the extreme, and probably few bad effects result from smoking it. The water pipe seems worthy of

imitation by smokers, for by it coolness and comparative purity are obtained. I am sorry that I cannot speak in the same terms of opium, of all our luxuries the surest destroyer of health, property, position and life; of all our vices the most insidious and most difficult to throw off; one of the quietest and least obtrusive, yet that which beyond all others tells most seriously in the long run on national life and prosperity. This is hardly the place to enter a protest against opium-consumption, but in considering health and disease among the Chinese, it is impossible to shut out this factor. Among the physical evils which naturally flow from indulgence in this habit, dyspepsia and inveterate constipation, with fatal diarrhœa or dysentery and spermatorrhœa on withdrawal of the drug, are a few of the most common. The native grown opium is much milder, more fragrant and of course less injurious; it is also cheaper, but the Canton (Indian) article alone satisfies old smokers.

Leaving opium out of our calculation, we may safely assert that the Chinese on the whole, in regard to eating and drinking, clothing and habits generally, have found out the secrets of long and healthy life in tropical regions, namely keeping cool, being moderate in diet, and cultivating tranquil habits both of body and mind. Keeping cool is of prime importance in preserving health in hot countries. Tea and iced beverages, such for example as the *swan mi t'ang* (acid-rice-soup) are certainly preferable to alcoholic but so-called "gently stimulating liquids." As a rule, the closer Europeans everywhere in China keep to the aqueous in summer, the better will health be retained.

Clothing.—The clothes of the Chinese are generally of the most becoming and simple kinds. Long dresses are the rule, etiquette demanding this. A painting or sculpture which exposed anything but the head, and perhaps the hands, would be set down as barbarous and gross. In summer a long cotton or silk robe is the chief part of the dress; in winter wadded garments are in use among the poor and middle classes; sheepskin and lambskin a grade higher; otter, wolf, fox, squirrel and sable among the upper and official classes. Their dress is a seasonable one, well suited to moderate the effects of heat and cold. Without changing the entire suit, the Chinaman takes off or puts on a robe as occasion requires. In the spring and autumn this is particularly necessary. The morning and evening dress is hardly suited for mid-day, and *vice versâ*. The Chinese are destitute of shirts, flannels and anti-cholera bandages. Their style of dress, coupled with their style of living, renders some of these foreign requisites unnecessary. Our abdomens are not half so well protected from sudden cold &c. as are those of the Chinese. I am in the habit of advising every European who consults me, to adopt at once on his arrival long flannels with or without a belt or bandage. Diarrhœa, colic and dysentery are in this way frequently prevented in summer. In winter, and probably after being seasoned, flannels might, if strongly objected to, be carefully and slowly laid aside. Ordinary care, of course, must be exercised at the same time in regard to eating, drinking, sleeping, &c.

I have already referred to the Chinese thick-soled shoes. In winter they wear here a shoe padded with cotton, and the trousers are tightly tied round the ankle. In summer they wear generally white straw hats, which permit a current of air to pass freely round the head, or they have besides large brims which hang down and shade the face, neck and shoulders. In winter they wear a tight fitting hard cap of silk or satin, or a warm soft one of felt. Many expose their heads to the most violent sunshine without the slightest danger, or protect themselves with only a handkerchief or fan, but then they have been born and brought up in the country. Sunstroke or heat apoplexy is almost unknown in Peking. No cases have occurred here among foreigners.

Baths.—Numerous public warm baths exist in Peking. They are known by a lantern, lighted at night, and raised on a lofty pole. The water is usually changed only once daily, but in summer sometimes twice. The utmost care is, I believe, observed in admitting persons to these baths. The floors and the baths themselves are heated from underneath by stoves. Private baths in wooden tubs may be had to order. An ordinary bath costs a penny, and during the last month of the Chinese year about three pence.

Cold bathing is never resorted to, and it is to this use of warm water, to their generally temperate habits, and partly also to their non-use of flannel that we must attribute the absence of prickly heat in summer. Europeans are in every hot season afflicted by this troublesome eruption, the skin-sensibility being greatly increased by stimulants. But although baths do exist, the people cannot be said to be addicted

to bathing. In this respect they differ widely from the Hindoos. Baths *à la Chinoise* too often consist merely of a tea-cupful of warm water aided by a small handkerchief. Such was the bath in which the greasy YEH indulged on his way to Calcutta. The Chinese dread the effects of water, especially cold water, when applied in any way to the surface of the body. It would be positively cruel to think of disarming the beggars of their ingrained dirt and grease by a bath, because they would then die from inability to resist the cold. The middle and upper classes have objections also, founded on their theory of the *yang* and *yin*, or the upper or heavenly and lower or earthly portions of the body. Many will wash the upper half, who refuse to wash the lower, being afraid of the lower vapour ascending and injuring the upper. Foreign practitioners when called to attend Chinese patients must eschew water dressing, baths, fomentations and such like things, if they wish to remain in attendance and inspire respect and confidence. The universal habit of shaving the head is a good one among a people naturally inclined to the side of filth. It is however intermitted during illness and mourning, which latter in the case of the Emperor's death extends to 100 days. If to unshaven pates we add dirty white dresses, the emblems of mourning, unwashen hands and uncut finger-nails, the picture of a Chinaman's wretchedness and filth at such a time is completed.

There are two celebrated baths in the neighbourhood of this city. One at *Pi-yün-sze*, a famous Buddhist temple already referred to, and situated 12 miles to the west, contains sulphuretted hydrogen. The waters are cold, and after filling some tanks in the monastery, are led in an aqueduct to the *Kwĕn-ming-hu*. The other is at *T'ang-shan*, 20 miles to the north, and about 15 miles S. E. from the celebrated Ming Tombs. There are here two springs closely adjoining each other, built round with marble. The southern spring is the warmest, having a temperature of about 120° Fahrenheit. These baths have been enclosed in a park adorned with handsome buildings, and a small lake has been formed, the sides of which are planted with trees and crowned by pavilions. The whole must have formed at one time a pleasant Imperial retreat in summer. I need hardly remark that they are not now visited by the Emperor, and consequently, like many other things, they have been allowed to fall into a ruinous condition. The water is conducted from the spring to the Imperial bath-rooms, and also to other rooms for the use of the attendants. It thence flows out of the enclosure and through a series of public baths, all of which are in a dilapidated condition. There is a constant ebullition going on, and the deposit of carbonate of lime on the surface of the land indicates the presence of bicarbonate of lime in the waters. After the ebullition ceases the waters still remain alkaline, shewing the presence of alkaline carbonates. There is no trace of sulphur or sulphuretted hydrogen. The chief ingredients are the alkaline chlorides, particularly the chloride of sodium, carbonate and sulphate of soda, bicarbonate of lime and a little magnesia, with sulphate of lime and silica. These waters have proved extremely useful in gout and chronic rheumatism. The reader will observe a considerable likeness in these Peking waters to the celebrated spas of Baden and Bath, both as regards their great heat and their constitution. It is a pity that there is not better accommodation and more of it than the little village adjoining affords. The Imperial quarters are forbidden to all. Fish are plentifully found wherever this water flows, but of course beyond a certain point they dare not approach.

Trades, Exercises, and Games.—Peking being the residence of the Emperor, the city is properly one huge walled camp, with just sufficient business to meet its own wants. There are no manufactures. The trade of various kinds is carried on by representatives from the neighbouring provinces. There is no particular trade or business that proves injurious to life, if we except that of the soldier, who is subject to explosions, of which not a few occur yearly. The Manchus are obliged to drill with the bow and arrow, their monthly pension from the Imperial exchequer depending on their regular observance of this exercise. At odd times, among the soldiery or other of the inhabitants who have leisure, fencing, wrestling, throwing the stone, practising with dumb bells, shuttlecock and other gymnastic games prevail. Lighter exercises consist in bird catching by means of hawks, bird airing, bird singing, bird carrying in cages or on little cross sticks, bird manœuvring and instructing in various exercises, and kite flying, in which latter a considerable share of the time of nearly every Pekingese is spent.

General Habits.—The Pekingese retire early to rest, opium smokers excepted. They do everything quietly and methodically, without the slightest exertion or fuss. They seldom do anything for themselves

which can be done by another. They have few ups and downs in their world. Fate regulates everything, and so they are content with their lot. If they have wealth they use it—if none, they do without it. They live on in one regular routine. Worry is unknown. None of the causes, such as competition in business, speculation, religious controversies and party politics, which in the west undermine health, and year by year increase the mortality, are found here. General indolence and ease, disinclination to be troubled about matters, and a desire to let things take their course, trusting that all will come right, are their characteristics. This state of feeling, partly inculcated by their various religions, and occasioned partly by the climate, conduces most effectively to the permanence of their institutions, and indisposes them for any change in their customs.

There is very little of the temperate climate in any part of China, and this is true of Asia generally. It is everywhere either very hot or very cold. In the former case the inhabitants are enfeebled, in the latter they are strengthened; the one region is inhabited by slaves, the other by the conquerors.

In my next Report I hope to bring to an end my remarks on the Medical Topography of Peking, especially noticing the epidemics of the last ten years, the prevailing winds, the temperature, the hot, cold and rainy seasons, and the usual mortality.

ADDENDUM TO SWATOW REPORT.

[See page 9]

The following is a classified list of the diseases treated among natives by Dr. THOMPSON of Swatow during the summer season of this year:—

A.—ZYMOTIC DISEASES.

I.—*Miasmatic Diseases*:—

Dysentery,	8	cases.
Erysipelas,	3	,,
Intermittent Fever,	101	,,
Remittent Fever,	16	,,
Ophthalmia,	64	,,

II.—*Enthetic Diseases*:—

Syphilitic Iritis,	21	,,
Gonorrhœa,	3	,,
Orchitis,*	4	,,
Paraphymosis,*	3	,,
Phymosis,*	4	,,
Syphilitic Rheumatism,	7	,,
Syphilis, Primary,	4	,,
,, Secondary,	87	,,
,, Tertiary,	8	,,
Syphilitic Ulcers,	57	,,
Stricture of the Urethra,*	1	,,

III.—*Dietic Diseases*:—

Scorbutus,	4	,,
Purpura,	1	,,
Ebriositas,	1	,,

IV.—*Parasitic Diseases*:—

Ascarides,	3	,,
Vermes,	19	,,

B.—CONSTITUTIONAL DISEASES.

I.—*Diathetic Diseases*:—

Rheumatism,	57	,,
Epithelial Cancer,	1	,,
Anæmia,	44	,,
Asthma,	17	,,

II.—*Tubercular Diseases*:—

Phthisis Pulmonalis,	15	,,
Scrofula,	9	,,

C.—LOCAL DISEASES.

I.—*Diseases of the Nervous System*:—

Paraplegia,	1	,,
Hemiplegia,	3	,,
Hysteria,	1	,,
Neuralgia,	17	,,
Epilepsy,	4	,,
Sciatica,	8	,,
Otitis,	1	,,

II.—*Diseases of the Circulatory System*:—

Varix,	2	,,
Heart Disease,	9	,,
Angina Pectoris,	1	,,
Aneurism, Axillary,	1	,,
,, Brachial,	1	,,
,, Varicose,	2	,,

III.—*Diseases of the Respiratory System*:—

Bronchitis, Chronic,	64	,,
,, Acute,	1	,,
Emphysema,	1	,,
Pleuritis,	1	,,

IV.—*Diseases of the Digestive System*:—

Splenitis,	3	,,
Gastritis,	10	,,
Toothache,	7	,,
Peritonitis,	2	,,

C.—LOCAL DISEASES—*Cont.*

IV.—*Diseases of the Digestive System*—Cont.:—

Piles,	6	cases.
Inguinal Hernia,	5	,,
Icterus,	5	,,
Hepatitis,	1	,,
Dyspepsia,	80	,,
Fistula in Ano,	17	,,
Colic,	28	,,
Ascites,	2	,,

V.—*Diseases of the Urinary System*:—

Bright's Disease,	6	,,
Fistula in Perineo,	1	,,
Hematuria,	2	,,

VI.—*Diseases of the Generative System*:—

Spermatorrhœa,	5	,,
Hydrocele,	8	,,

VII.—*Diseases of the Locomotive System*:—

Arthritis,	6	,,
Caries,	4	,,
Necrosis,	8	,,
Periostitis,	2	,,

VIII.—*Diseases of the Integumentary System*:—

Rupia,	4	,,
Ulcus,	89	,,
Urticaria,	1	,,
Onychia,	2	,,
Paronychia,	7	,,
Prurigo,	3	,,
Psoriasis,	50	,,
Impetigo,	3	,,
Lepra,	22	,,
Lupus,	1	,,
Abscess,	20	,,
Elephantiasis,	9	,,

IX.—*Diseases of the Eye*:—

Amaurosis,	6	,,
Anchyloblepharon,	1	,,
Cataract,	10	,,
Corneitis,	13	,,
Cornea, Conical,	18	,,
Opacity of,	45	,,
Ulcer of,	33	,,
Conjunctivitis,	47	,,
Distichiasis,	24	,,
Entropium,	46	,,
Destruction of the Eye,	4	,,
Iritis,	2	,,
Inflammation of the Lachrymal Duct,	5	,,
Mydriasis,	2	,,
Glaucoma,	1	,,
Hernia of Iris,	5	,,
Pannus,	14	,,
Pterygium,	19	,,
Trichiasis,	5	,,

XI.—*Diseases of the Connective Tissue*:— 15 ,,

D.—DEVELOPMENTAL DISEASES:—

II.—*Of Women*, 1 ,,

E.—LESIONS FROM VIOLENCE TENDING TO SUDDEN DEATH:—

I.—*Accident*, 24 cases.

* Arising from gonorrhœa (1), otherwise these should not be placed under the *Enthetics*.